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CyberHam Magazine

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IT'S ABOUT TIME.....

Sharon Harlan - WB9SFT

The one theme we at CyberHam have heard ever since we introduced it at a ham-fest in March is "It's about time someone put together a publication combining amateur radio and computers." Our excitement has grown throughout the summer as we have talked to many hams throughout the midwest about our project. Since there does not seem to be any one place where one can go to find information on computers and ham radio we think this magazine will fill that niche. We are going to strive for a quality publication geared to you, the amateur radio-computer user. We think we have some terrific articles for the first issue. We would like to have your opinion-good or bad-so that we can keep improving on what we already have. The support we have gotten from our writers has been great and we want to thank them very much for their contributions to this premier issue of CyberHam.

Do you know any Mac users? We are currently looking for contributors who use their Mac computer with amateur radio. Someone who can review programs and contribute original programs geared to the Mac.

At this point let me introduce myself to you. My name is Sharon Harlan, my amateur callsign is WB9SFT. I was first licensed in 1975, upgraded to general class in 1977, and to advanced in 1980. I have been involved in our local club as secretary, vice- president, and president, and newsletter editor. During my term as newsletter editor I was appointed as an ARRL Assistant Director. From there I was appointed Affialiated Club Coordinator in the Illinois. In 1990 I was elected as Illinois Section Manager-a position which I held for four years. I am active in church and community affairs.

73,
Shari

Make Mine Margarita's

Gene Harlan - WB9MMM

After putting together our first issue of CyberHam, I'm ready for one of those margarita's! It is not as easy as it looks. But, the first one should take the most work, right?

I would like to thank all the people that contributed articles. So many, we could not print them all, so we have some to start the next issue with. We want feedback about how you think we are doing. Anyone writing a "LETTER TO THE EDITOR" for possible publication, giving us your thoughts, will be entered into a drawing for a book "Making Random Dot Stereograms" (includes disk). Email counts as mail, of course. Mail needs to be received by October 1st to be entered into this drawing.

What we do need is advertisers! I want to thank those that did take a chance with CyberHam in this Premiere issue. So many people have told us that we are right on with the ideas that we have, and the number of subscriptions coming in supports it as well. Make sure that you tell the advertisers that "you saw it in CyberHam Magazine". This is the only way that they will stay with us. Tell your favorite companies that you deal with that they should advertise in CyberHam Magazine, as that is what will help pay for printing every month.

Please take your CyberHam Magazine to your local club meeting, and show it around. Better keep your eye on it though, someone might walk away with it!

See you in November. Let's hope the band conditions start to improve. 73.

Gene

NEWS RELEASE

For Immediate Release (July 22, 1996)

from THE AMATEUR RADIO NEWSLINE Editorial Office
Bill Pasternak - WA6ITF

TOBY METZ KB7UIM, NAMED 1996 "YOUNG HAM OF THE YEAR"

(Saugus, CA) — Toby Metz, a 16year-old amateur radio operator from Meridian, Idaho and Agoura Hills, California, has been named the 1996 "Young Ham of the Year," according to Award Administrator Bill Pasternak (WA6ITF). The award is jointly sponsored by Pasternak's Saugus, California-based "Amateur Radio Newsline," Yaesu USA orporation of Cerritos, California, and CQ Magazine of Hicksville, New York.

Metz, whose ham radio call sign is KB7UIM, recently moved to California from Idaho. He was selected based on his work with introducing amateur radio to the deaf community of Boise, Idaho.

Toby explained that his involvement with the deaf community came as the result of a scouting project that quickly became a public service.

"I knew I needed an Eagle project, so I began brainstorming with my friend Rich Dees (AA7WG) on how I could bring the handicapped into this picture while also using ham radio. We began talking about the possible ways that the deaf might use ham radio and realized that it would be natural for them to use packet radio." [Note: Packet radio is a means of communicating over the radio via computer.]

Toby decided to start a ham radio training class for the deaf. He enlisted the help of a woman from his church who worked with deaf people in Boise. Through Toby's perseverance and her assistance, a small but enthusiastic training class came into being. Metz says that it was a class that quickly grew.

"At first we started off with three people but the class became larger when family members decided to come as well... (One student) even learned code using a device that converts sound to vibration that you can feel with your fingers."

Toby Metz's Eagle Scout project drew praise from the handicapped community in Boise. It also brought Toby to national prominence when he was asked to write up the project for last November's "73" magazine.

New to southern California, and now a student at Agoura Hills High School, Toby says that two of his priorities are joining another ham radio club similar to the one he enjoyed in Boise and to become an Explorer Scout.

Bill Pasternak - WA6ITF
newsline@ix.netcom.com.

DON'T WORRY — YOUR HOROSCOPE SAYS YOU WILL WORK MUCH DX TODAY!

The STARS

These are the ones that will make it happen!

These are the people that wrote the articles for this month. we would like to express our appreciation to each one for taking the time to write the articles and make them interesting. In some cases, we are lacking information, and hope that we can fill the void in future issues. Make sure you let the authors know that you liked the articles that they wrote. Most have email addresses, and it only takes a minute to jot them a note.

Thanks again for a great job!

Gene Harlan - WB9MMM

Brian Boyer - Brian is a project manager/software engineer for a Rockford, IL. based gaming company. He enjoys programming with Visual Basic and C++. Most of his time is spent researching and applying multimedia technologies. He is an avid user of 3D Studio Classic and 3D Studio Max. He can be reached at bboyer@earth.inwave.com

Bob Bruninga - WB4APR - Bob wrote the DOS version of the APRS program.

Ronnie Cohen - KF4GHG - Ronnie is a Professional Engineer and has been involved with computers for over 12 years (mostly with software). He enjoys programming in Quickbasic, C, Assembly, and Paradox. Ronnie and his wife started Mom 'N' Pop's Software in 1990, and are Association of Shareware <ASP> Vendors. He has written shareware reviews for The Alternative Software Bulletin, The PC Monitor, Computers in Agriculture, and has published several articles in technical journals. He is a Ham operator (KF4GHG), has 2 children, a dog, cat, and a Mother-in-Law.

Dave Ewaldz - N9HKM - Dave has been a ham for over 17 years. During that time, he has operated just about every Ham Radio mode possible. Dave discovered packet radio in about 1986, and has operated packet radio nodes and bbs's in the Northern Illinois area since that time. Dave is a pack rat at heart (much to his wife's chagrin), and enjoys home brewing and recycling used radio and computer gear. As a result, Dave's shack is comprised almost entirely of home brew and converted commercial gear. Professionally, Dave is a control systems engineer. His email address is dewaldz@sinnfree.sinnfree.org

Ken Farver - KB9I - For information for your use at anytime, I have my grandfathered First Class Commercial RadioTelephone (now the General Class RadioTelephone) license since 1972, Extra Class Amateur license since 1979, 22 years with Ameritech and can be reached at "kfarver@mc.net".

Nancy Kott - WZ8C - Nancy was first licensed as a Novice KB8FAY in 1988 with the intention of just using 2 meters to keep in touch with her parents (WK8F/WO8E) who live about 50 miles away. But she got bitten by the CW Bug and a couple years later upgraded to Extra WZ8C. Nancy is very involved with the International Morse Preservation Society, aka FISTS and has been a SysOp on the HamNet forum about 3 years. Her computer is an AST 486/DX/100 and the ham radio setup is a Kenwood TS440-AT to a G5RV. She is in the process of putting up her first tower and 2 element cubical quad. When not on the computer or on the air (which isn't very often) she enjoys woodcarving. Snail mail address is Nancy Kott PO Box 47, Hadley MI 48440-0047 Her email address is 73631.3654@compuserve.com.

Gene Melton - AK9N - Gene makes his honest living in the electrical utility industry as an EE (Univ of Wis, go Bucky!) in the area of substation standards and design. He has been a ham (licensed) for almost 20 years (currently AK9N), and enjoys chasing those elusive DX stations on the low ends of 20 and 80 meters. Since he does not build nor program computers for his day job, he strives to keep up with the technology in his off hours as time and finances otherwise permit. Current goals are to do something interesting with Linux for the ham shack and perhaps become a literate C/C++ type. Gene's email address is emelton@interaccess.com

Ed Mitchell - KF7VY - Ed has been licensed since 1973 and has at various times been active in amateur satellites, emergency communications, building antennas, building bits and pieces of radio gear, public service communications, building more antennas, search and rescue, blowing up pieces of homebuilt radios and of course, building even more antennas. Professionally he works in the PC software business. He and his wife, Kim Anderson-Mitchell, N7VPL operate Ham Radio Online, one of the world's most popular ham radio web sites available at http://www.hamradio-online.com/. His email address is vbook@vbook.com.

Bill Parker - W8DMR - Bill has written many articles for ATVQ Magazine.

Bill Pasternak - WA6ITF - Bill is active on America On Line and with The Amateur Radio Newsline. His email address is newsline@ix.netcom.com

Terry Sellick - WA9TTY - Terry has been a ham for 29 years. He's not really that old, just got started early! Degree in Electrical Engineering, but have been slumming for the past 10 years. Currently working as a mild-mannered Sr Software Engineer for a major metropolitan machine tool company. Writer of real-time software for machine tools, data acquisition systems and embedded systems. Programming languages: C, Pascal, Basic, and assembly (sigh). OS experience: DOS/Windows, Unix, Linux, OS/2, AmigaDos, and VMS. His email address is tsellick@bix.com.

Fred Sharp - W8ASF - Fred is very active in SSTV and weather satellites. He has written articles for SPEC COM Magazine. His email address is f.sharp@postoffice.worldnet.att.net.

Odds and Ends

About the Cover....

The cover was created with a program called Chromazone, a screen saver written by Steve Gibson. He also wrote the SpinRite harddisk utility. There are many different designs that come with the program, and you can create your own! I only wish we could have had a color cover, as it is really striking in full color. When we get a few more advertisers, we can do that.

A demo of this program is available on Compuserve and I'm sure other services. For more information, Gibson Research can be reached at 800-736-0637 or CZSales@grc.com.

New Virus

Fred Sharp reports the following: "Just heard from a friend in Holland that there are two new virus' circulating on the Internet."

"One is 'GOOD TIMES'. If you receive and email with 'GOOD TIMES' in it, do not read it, JUST DELETE IT. It enters your system just by reading it."

"The next virus is called PKZIP300.ZIP or PKZIP300 aith ANY extension. It contains the Trojan Horse virus. Just delete or get rid of with McAfee, MSAV, or any virus killer."

FIRST LETTER TO THE EDITOR!

Hello Gene,
I see your letter (CyberHam) by the Hamnet Forum on Compuserve, and I'm very interested by this magazine.

I'm a Ham, and I have with another Ham, a Ham Radio BBS in France. The number is 33-1-48.32.13.96.33 for France, We have one node that works from 2400 to 14400 bps, soon to go to 28800 bps.

We are searching for more information for the BBS and more contacts....

73 to you, Michel - F1SRC

Ham Radio and the Internet

Ed Mitchell - KF7VY

A recent edition of a well known national magazine ran a feature story about the Internet and the endless supply of content available on the world wide web of Internet computers. A week later, the same magazine published a reader's letter to the editor saying the Internet was interesting but everything he read in that article was available from his local library, his local newspaper or on his television. So why did he need to spend money on a new techie toy?

Well, I'm here to answer that question and give you plenty of reasons to combine your radio hobby with the fascinating resources available on the Internet!

What Is the Internet?

The Internet is a diverse network of computers scattered around the globe interconnected by both high speed (typically 45 to 155 million bits per second, and soon, much faster than that) and lower speed connections. Data is delivered through a maze of interconnections through the magic of *packet switching*. Each data record is encapsulated as a packet of information and assigned a *source address* (the computer where the message originates) and a *destination address* (the computer where the message will be delivered). The data network transfers each packet through the network of networks - crossing from one network segment, switching to another, and another, and so forth, until reaching the recipient. All this takes place (usually!) in fractions of second - even when connecting from your home PC to say, a computer in Australia.

If you have used packet radio than you have an inkling of how the Internet operates, but at the much slower speeds of packet radio. If you have used "TCP/IP" packet networks then you really know how the Internet operates because the Internet also relies on the TCP/IP protocols (TCP is *Transmission Control Protocol* and IP is the *Internet Protocol* - both are used together in the Internet).

The Internet is just the infrastructure and the data communications technology that routes packets around and around. The best known parts of the Internet are the world wide web, providing point and click access to multimedia content scattered throughout the world. But there are other parts to the Internet too, including online forums known as *newsgroups* where anyone can post a comment, a question or followup on a previous posting; electronic mail; file transfers; and newer features like real-time digital audio transmissions. Overall, there are thousands of discussion newsgroups on every topic imaginable and the number of web pages will soon be measured in the millions.

The Uniqueness of the Internet

The Internet has two attributes that make it a unique medium - 1) the ease with which anyone can become a *content provider*, and 2) the ability to disseminate information in near real-time.

Just about anyone can become an Internet publisher or *content provider.* For as little as U.S. $10 per month you can publish up to 10 megabytes of content to a potentially world-wide audience. Many people have taken advantage of this new publishing media to provide all sorts of information on their *web sites* - much of it pretty crummy of course, but also a surprising number of gems on topics too specialized and with too small an audience for other media to tackle - like esoteric amateur radio VHF propagation or DX contesting pages. These small publishers (and some of the mainstream publishers too) provide a wealth of useful information to the radio amateur.

The second attribute is *real-time* or near real-time communications. When news happens, stories appear on the Internet instantly. While television and radio are also real-time, their relatively few channels limits their coverage to only a few topics (see preceding paragraph again!). By comparison, the Internet has a nearly limitless number of channels from which you can choose.

I run a popular ham radio web site called Ham Radio *Online*. As I write this column, I've just received a hot story from the public information officer of an amateur radio emergency communications team in Southern California describing Amateur radio communications at the heart of a raging fire in Southern California. In another 30 minutes, that story will go live on our well read web site providing positive Amateur Radio publicity to many thousands of readers throughout the world-wide web. This is real-time publishing!

Browsers and URLs

I won't tell you how to choose or install a web browser - but you'll need a modem, web browser software, and access to an Internet Service Provider. The most popular web browsers include Netscape Navigator, America Online, Microsoft's Internet Explorer, and Mosaic. I'll leave it to your documentation or your close friends to help you get your software setup and configured.

To access a particular Internet web site, you need to specify the site's address, also known in Internet technobabble as the site's *Universal Resource Locator*, or *URL* for short. You don't really need to know what URL means - you just need to know that when you see a funny address like:

http://www.fcc.gov

that the **http://** is your clue that you are looking at an Internet web address, in this example, that of the Federal Communications Commision. This is the address you need to type to access the FCC's web *server* (a server is the computer that delivers web content to you). Once online, you may seldom type a URL - instead, you'll click on screen location and be automatically linked to a new site.

Examples of Ham Radio Content Providers

To get you started with the Internet, I'll steer you towards some examples of cool content available on the Internet, focusing initially on the multimedia world wide web. You've just seen the URL of the FCC. Here you will find current Notices of Proposed Rulemakings, the full text of Reports and Orders (implementing rule changes) and much more.

The American Radio Relay League **p://www.arrl.org**) runs a web site offering a variety of ARRL information and resources for the radio amateur, including a number of special features such as an online listing of QST classified ads.

You can visit our own web site at **http://www.hamradio-online.com**, featuring original stories, newsletters, propagation predictions and much more. These three web sites are examples of information rich web sites, full of documents and other items that you can read or download.

Several sites provide excellent real-time information on current radio propagation conditions. These range from IPS Radio and Space Services, Sydney Regional Warning Centre, Australia, focusing on the southern hemisphere, to the Solar Terrestrial Dispatch. You can visit IPS at **http://www.ips.gov.au** where you will see a daily image of the sun, revealing the presence of sunspots, examine FoF2 critical frequencies or obtain propagation predictions.

The Solar Terrestrial Dispatch is produced by the Solar and Geophysical Support Services in conjunction with the University of Lethbridge in Alberta, Canada and provides numerous facts and figures regarding solar conditions. You can find the Solar Terrestrial Dispatch at:

http://holly.cc.uleth.ca/solar/

Figure 1 is an example image showing the current location of aurora, the gray line day/night terminator and predicted Maximum Usable Frequencies (MUFs) for the HF radio bands. This map is produced with data that is updated as often as hourly.

Figure 1. The Solar Terrestrial Dispatch produces a wealth of online information about current solar conditions.

Figure 2 shows the real-time (updated every minute!) auroral radar returns from Alaska and is provided courtesy of the University of Alaska, Geophysical Institute, Poker Flat Research Range located on the Internet at:

http://www.pfrr.alaska.edu

And if you want to find out when a sporadic-E layer propagation opening has magically created an opening on 10 meters or 6 meters, then check out the real-time Sporadic-E web postings at:

http://www.cybercomm.net/cgi-bin/cgiwrap/slapshot/prop.sh

Amateurs from throughout the world post their observations of sporadic-E layer propagation - you can add your own observations too.

By now, I hope you are convinced that the Internet is not just a slow, electronic compendium duplicating your local public library: Let's see you find this at your local library! If you are not now on the Internet, you soon will be!

Ed Mitchell - KF7VY
vbook@vbook.com

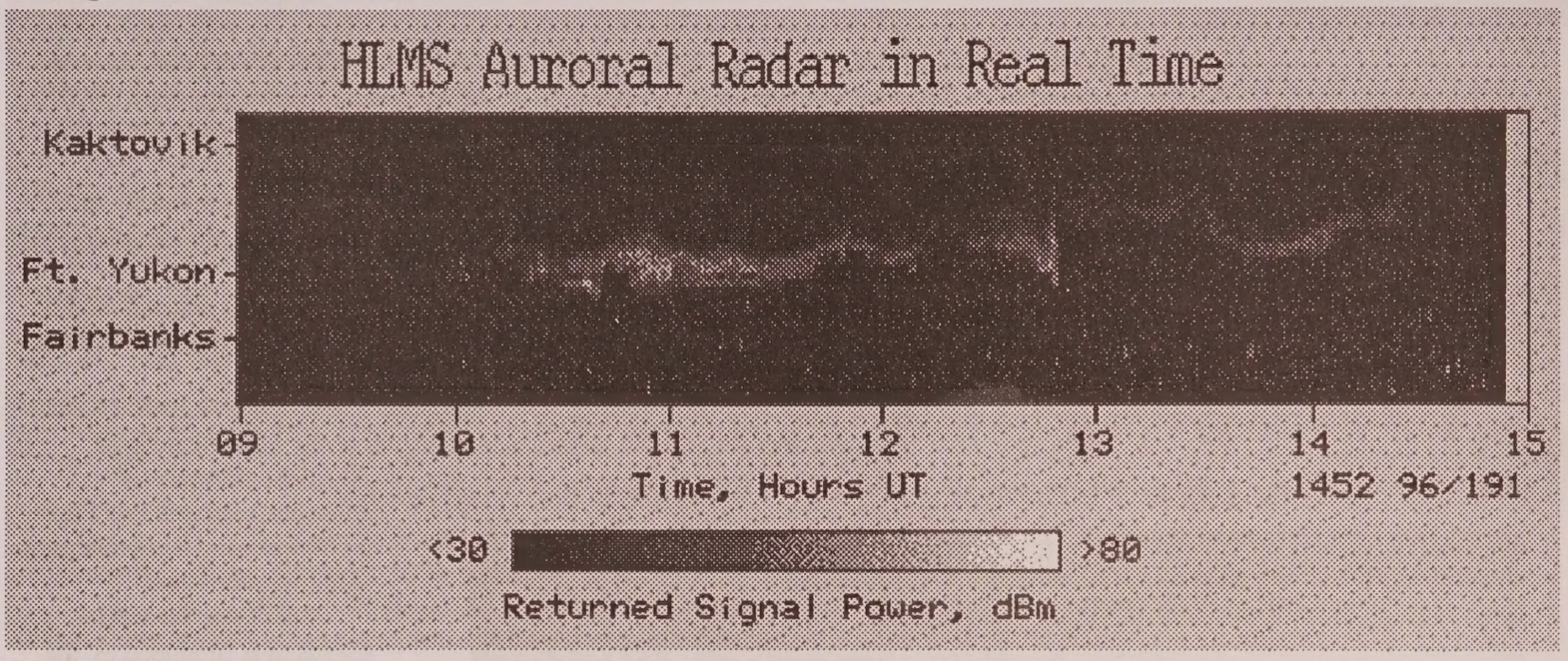

Figure 2. White bands in this real-time chart indicate areas of aurora that are returning radar echoes.

IN STOCK

service \'sər - vəs\ *noun*
- The occupation of performing work or functions that benefit and contribute to the welfare of others.
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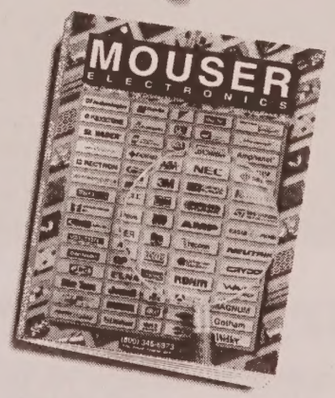

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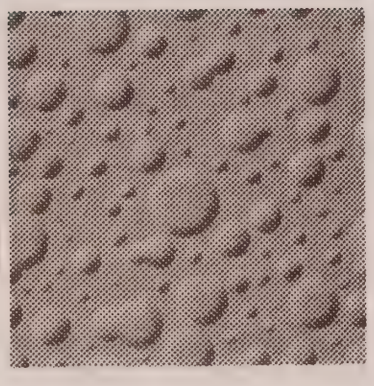
Hams on Compuserve

by Nancy Kott - WZ8C



In this column, we will be exploring **CompuServe** and what it has to offer ham radio operators. CompuServe is an on-line service available through subscription. If you would like a sample disk, call 1-800-848-8990 and request one free of charge.

Since there is a monthly charge for accessing CompuServe (price depends on which option you decide best suits your needs), you want to get the most for your hard-earned money. One of the things we'd like to do in this column is help you use shortcuts and ways to maximize the bang you get for your CompuServe buck.

Let's start off exploring the **HamNet** forum

There are many forums devoted to computers, software and hobbies. Let's start off exploring the **HamNet** forum since that is the obvious choice. To get to HamNet, simply enter HAMNET at the GO command that pops up when you click on the traffic light icon.

HamNet is dedicated to Amateur Radio and related topics including Shortwave Listening, Satellite Television and others. Membership is free and open to everyone interested in Ham radio. We welcome users interested in learning more about these topics - or experts willing to share their expertise with others.

To join us here, all you need to do is select the JOIN button. No other action is necessary and there is no additional cost beyond your normal CompuServe connect charges.

We do ask that you include your first name, last name and amateur radio callsign (if you have one) when you join HamNet. "Handles" are not permitted. If you are a vendor, please include your affiliation.

HamNet's Libraries are a vast resource of computer software, amateur radio newsletters, and much more. New files are added daily — so be sure to check the libraries often!

There is vendor support on HamNet, including **ICOM, AEA, MFJ, Drake, PacComm, InterFlex, Savant, Quantum, JPS. NARA, ARRL** and **CQ Magazine**. It's a great place to go when you have a question about your equipment, or want to find out about the latest and greatest toys available.

There are also at least 10 SysOps involved in the operation of HamNet. It's not unusual to find at least one on-line to help you using the real-time "chat" mode. And you are always welcome to leave a confidential message to the SysOps using "*SYSOP" as the addressee. No one but the SysOps will see your question or comment. The SysOps are there to help you get the most out of the forum, so if you have a question, please ask. If we don't know the answer, we almost always can direct you to the person who can help.

There are 23 sections in HamNet and open discussion is encouraged. Members can say what they like about the areas covered by the forum within the bounds of the CompuServe Operating Rules. Of course, the accuracy of the advice you may read on in the message postings can't be guaranteed by HamNet, but it always will give you something new to try or think about. In future columns we will go more in depth into the different sections in HamNet and the Libraries.

Using a local phone number to log onto CompuServe will save you money on your phone bill. If you don't have a local Internet access number, GO "phones" when you log onto CompuServe. A menu will direct you through finding a local phone number - if you live near a large city, there may be one in your area. If you don't find one listed, check out the rates on the 1-800 numbers offered. They are adding more access numbers all the time, so if you don't find one today, check back every few weeks. There is sure to be an access number within your area code. If you are already using a local number to access the Internet, you can configure your CompuServe session settings to use this same phone number to access your CompuServe account.

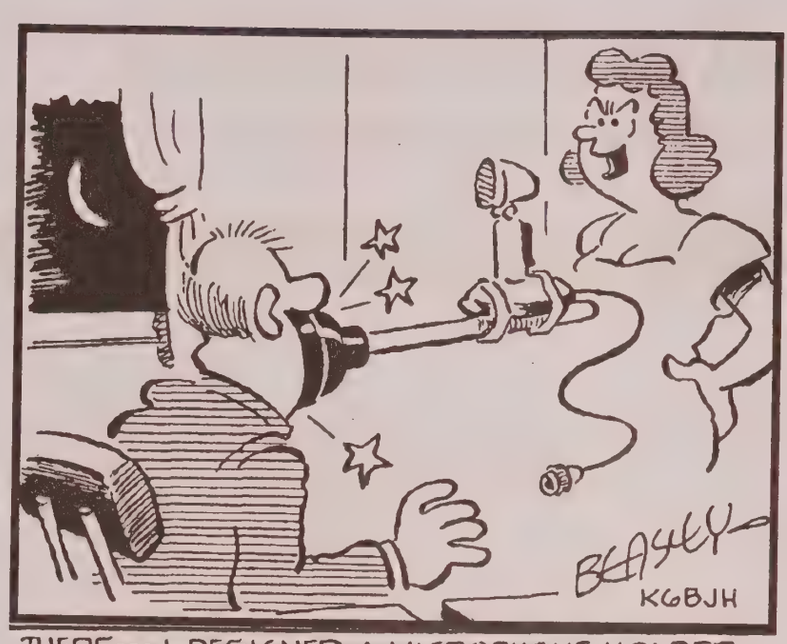
To use your Internet phone number to access CompuServe, bring up CompuServe, click on CONTINUE. Don't connect at this time - our goal is to minimize your connect time. You waste valuable connect time by doing tasks while connected that you can do off-line. Then click on SPECIAL on top of your CompuServe screen, then on SESSION SETTINGS. In the box marked 'network' click on the arrow next to the box until you highlight INTERNET. Click on the arrow next to the box marked 'dial type' until you highlight the word DIRECT. Put an X in the Winsock box, click on OK and you're all set!

An important tool for getting the most out of CompuServe is a navigator program like WinCim or TapCis. These can be ordered on-line through CompuServe or by calling the 800 number mentioned earlier. They generally charge your account for these programs, but they give you the same amount in connect time credit to your account so it comes out even. The navigator programs are great, allowing you to download and upload material quickly, minimizing your on-line connect time. They also have file cabinets and other options which help you organize your information which allows you to use CompuServe more efficiently.

WinCim is the most commonly used Navigator program, and the one I use, so I'll be using it as a reference when writing this column. Most of the commands translate easily into use in TapCis also.

I'm not employed by CompuServe. Although I am a HamNet SysOp, I don't receive any financial compensation. I just enjoy visiting with the other Hams on CompuServe! I hope to help you meet other Hams on CompuServe and get the most out of your connect time. Where are your favorite places to hang out on CompuServe? Drop me a line and let me know. I'll check them out and include them in a future column.

Nancy Kott - WZ8C
73631.3654@compuserve.com



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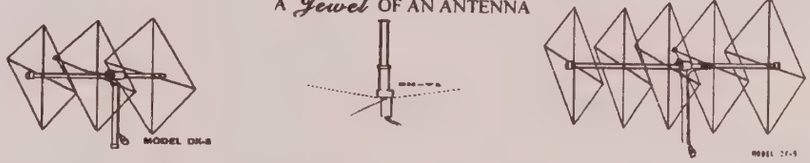

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Linux Labyrinth

by Gene Melton - AK9N

Welcome to the Linux Labyrinth, which will hopefully be a bi-monthly column on my trials and tribulations of my wanderings and meanderings through the setup and implementation of the Linux Operating System on the hamshack PC. Linux is a clone of the Unix OS, written by a university student in Finland, apparently as more of an 'I can do this' type of project than anything else. It's not a plug-n-play toy by any means. You need to spend some time at the computer, one eye on the monitor, one eye in a book(s), another eye plugged into the Internet, all being helpful. This column will not be a step by step tutorial on installing and running Linux. A lot of that type of information is available both in the documentation that comes with the major installations, from books that are available at major bookstores, or from info on newsgroups, mailing lists, and Web sites on the 'Net. This will be more of a log (in keeping with the ham radio connection) or diary of my meanderings through the Linux Labyrinth. Obviously a lot of column space will be spent on things that I have spent a lot of time on. If I luck out and have few or little problems with something, you will read little or nothing about it here.

Linux is a clone of the Unix Operating System

When it came time to find a name for this column, some time was spent with a dictionary (specifically Webster's New World) to come up with something snappy and memorable. Well, according to our friend Noah, the definition of a labyrinth is "as in a maze, winding passages, hard to follow, lost" which is as good a description of where I'm presently at with this OS.

labyrinth is "as in a maze, winding passages, hard to follow, lost"

I should say something about my background and credentials. The callsign is AK9N, and I have been licensed since 1977 (this is scary, I'm pushing 20 years here!). I have a BSEE degree and work for an electric utility in the area of substation standards and design, especially concerning SCADA. Don't worry if that makes no sense; like I tell my boss, a lot of what goes on here is being made up on the fly. I am a non-programmer in the 'real world'. If I did that all day, I probably wouldn't want to come home and spend my leisure time doing more.

The hardware is sort of up to date, but getting older with each new breakthrough in technology. The PC is a Pentium 60, couple of small (125 Meg) hard drives, one for DOS/Windows, the second for Linux, 16 Meg of RAM, 6X CD-ROM drive. A DRSI packet card, a W9XT contest card, and an unknown sound card from Dayton round out the PC. Sitting around here somewhere is an Irwin tape drive that will eventually find it's way into the box some day. A Ten-Tec Omni V, Yaesu FT-480R and Yaesu FT-780R are the radios, with a Mosley TA-33 and some various wires outside in the weather. I mostly use the Yeasu for packet, but there is a 2 meter beam in the garage, perhaps someday it will be used to chase grid squares on that band. There is a long held interest in satellites which is why the 780 sits on the shelf. I used to monitor Oscar 6 and 7 passes in the pre-license days. It always has amazed me how a small piece of the ten meter band could come alive with signals for ten to twenty minutes, and then just as suddenly return to static and silence. I have done some contesting, enjoy chasing DX on CW, would like to spend some time programming in C/C++, and am currently pursuing a Master's degree in electrical engineering. So why did I volunteer to write a column for a magazine???

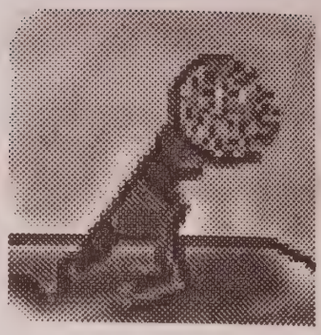
So where does Linux fit in with any and all of the above interests and hardware. Well how about a logging and award chasing program, a packet interface program, a rig and rotor control program, and anything else that may come to mind along the way. Make sure that you keep in mind that there is no guarantee that any or all of these applications will ever come to pass. What I can promise is that the journey will definitely be interesting.

If you the readers have any thoughts on these matters, e-mail probably will work the best but the postal service does deliver here to the Labyrinth on a daily basis.

Gene Melton - AK9N
emelton@interaccess.com

ibits

by Ken Farver - KB9I



CW on the Internet! I don't think so! But Phone on the Internet, You Bet! Of course you're on the Net, and of course you have a microphone to plug into your sound card. Let's head out on the Net and download some demo's! There are many Windows demos available, here are a few:

DigiPhone at http://www.digiphone.com/
WebPhone at http://www.netspeak.com/
Internet Phone at http://www.vocaltec.com/demo12.htm
Intercom at http://www.telescape.com/
PowWow at http://www.tribal.com/
TeleVox at http://www.voxware.com/
Webtalk at http://www.webtalk.quarterdeck.com/

Now for some demos for you Mac users:

Internet Phone at http://www.vocaltec.com/demo12.htm
Maven at ftp://sunsite.unc.edu/pub/packages/infosystems/
PGPfone at http://www.mit.edu/network/pgpfone/

For those of you that are video inclined, be sure to check out:

CU-SeeMe at http://www.cu-seeme.cornell.edu/

Hurry up and get connected! Maybe we could have the usual WAS, WAC, DXCC, etc. just for the Internet.

Anyway, the telephone companies are asking for permission to raise residential rates and lower business rates in order to compete with the new local service providers. Now that people are connected to a local provider and staying on all day, the telephone companies are screaming. The average local phone call only lasts nine minutes, and the switching systems at the telephone companies are not configured for you to be connected for a very long time. During this past winter on the East Coast, some people couldn't get dial tone, due to the amount of "Net Surfers" at home because they couldn't get to work.

A group of 130 telecommunications companies formed as America's Carriers Telecommunication Association (ACTA) has asked the FCC to stop companies from selling hardware and software that let you use the Internet for long-distance voice communication. For more information, check out the VONYES Coalition home page at:

(http://www.von.com/vonyes/).

For more information about Internet Telephony go to:
(http://rpcp.mit.edu/~asears/main.html).

Check out these places for FAQ's on Internet Telephony:

http://www.northcoast.com/~savetz/voice-faq.html or
http://rpcp.mit.edu/~asears/voice-faq.html

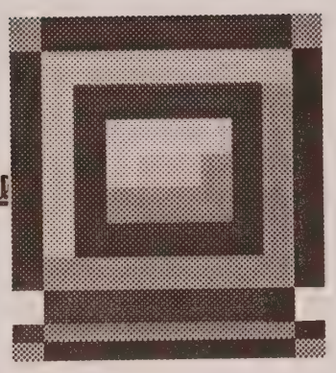
A 16 bit sound card is needed, but if you want your multimedia and games to sound better, go with the 32 AWE. If you have the SoundBlaster type, go to (ftp://ftp.creaf.com/pub/creative/files/awe) to retrieve the full duplex driver for your sound card.

Be sure to register anything that you continue to use. Registration gets you the updates and manuals, and lets the manufacturers continue to upgrade.

Ken Farver - KB9I
kfarver@mc.net

Packet Radio

Dave Ewaldz - N9HKM



In my first packet radio column in CyberHam I decided I would first share my plans for future articles as kind of a "teaser". There are many exciting new developments going on in wireless communications around the world. Many of these developments are not well known in the general ham radio mainstream. Also, there are many regional packet radio groups pursuing some rather interesting projects as well. As a result, I will try to expose you to these developments and activities. Some of these include: new bbs and end user programs, new applications for use over packet, high speed data radios, modems, and data interfaces, and new protocols for error correction, and channel utilization improvement. Additionally, I will strive to cover topics in the area of tcp/ip over packet radio.

Another topic I want to cover is a comparison of the various versions of NET/xNOS. There are currently many versions of xNOS available with various features. As a result of having so many versions to choose from, there is a lot of confusion among new packet TCP/IP experimenters as to which versions of NOS have what features.

JNOS seems to be the most popular version of xNOS used today. Most people start out by using a pre-compiled distribution executable. However, the pre-compiled executables usually do not meet everyone's needs. Many ham tcp/ip'ers reach the point where they want to build a custom version of JNOS to meet their exact needs. The act of compiling JNOS can be a challenging experience if you have never compiled a C program before. To help ease the learning curve, I will write a how to article covering the topic of building your own JNOS.

IN SEARCH OF THE ULTIMATE PACKET RADIO BBS

Enough teasing, and on to the topic for this issue. My first packet radio bbs was based on W0RLI's software, which I ran for quite a while. After investigating the other available bbs programs, I switched to MSYS because it provided built-in Netrom protocol support, as well as limited tcp/ip functionality. The one thing that I never liked about all of the available bbs programs, was the "kitchen sink" method of organizing messages. Every time a user logged into the bbs, he would begin to list the several hundred messages since last logging in to decide what to read. The next user would do the same, then the next, and so on. A major peeve of mine is the poor user interface in general of most of the available bbs's. There are so many different messages of different topics, it is quite a task for most users to sort through it all for items that interest them. I think it is safe to say that most bbs's have many active messages that are never read because of the tedious methods of checking and reading messages. The old "mailbox" paradigm seems to be outdated in these days of client-server operation found throughout the computing industry.

This is the main reason I moved from MSYS to xNOS several years ago. My current JNOS system sorts messages into separate areas, according to message topic. The message topics are based on the data found in the TO and @ message fields. For example, a message to keps@amsat is placed into the keps message area. I have a WW area for @WW messages, I have an APRS area, a Skywarn area, an Amsat area, etc. The users can "easily" sort through the messages that interest them, and ignore the rest. No complex listing commands to remember, no user education problem, it just works. This is with a system having over 1000 active messages, with 300-400 new ones arriving per day. I won't claim that the xNOS user interface is the ultimate solution, nor is xNOS an easy task for many people to set up properly as an ax25 forwarding bbs, but it suits the purpose at the QTH here for now, and the 80 or so users of my bbs seem to like the setup.

I think the software authors need to think about improving the user interface of their programs, and improve the state of the bbs art. How to improve the user interface? Maybe it's time to start re-thinking the terminal oriented bbs paradigm. How about a client/server type of implementation? Let the client handle some of the work. Let the user decide on their end how they want to configure things to their liking. In a step towards this, Brian Lantz, KO4KS has added http protocol (as used in World Wide Web) capability to his current beta version of xNOS (TNOS). By the time you read this, Brian should have released this with the distribution TNOS. This feature will open up lots of possibilities. To appeal to the widest variety of users, a client side packet web browser suitable for use with ax25 tnc's still needs to be developed to utilize TNOS's http bbs interface, as only tcp/ip based browsers exist today. However, using tcp/ip to access the TNOS bbs using Netscape works great for now. Try Brian's own TNOS bbs http user interface on the internet using your web browser at http://ko4ks.ampr.org/bbs

In addition to improving the user interface, another possibility for bbs improvement is going to alternate types of message dis-

tribution. Broadcast types of message distribution such as Pacsat protocol offer some possibilities. Joachim Schurig DL8HBS has added this capability to his Dpbox bbs program for the Linux operating system, along with many features including the message area concept that xNOS has. My next article will cover the Dpbox bbs program in detail. The tcp/ip network news transfer protocol (NNTP) is also very suitable for packet bbs message use. NNTP could be used for packet message distribution if a nice client program were developed targeted specifically for packet use.

Most bbs's today employ a user interface similar to that of the original CPM based packet bbs developed by W0RLI many years ago. The time is now long overdue for some drastic improvements to the packet radio bbs software. Some of the newer bbs programs such as TNOS and Dpbox offer promise in this direction.

Dave Ewaldz - N9HKM
dewaldz@sinnfree.sinnfree.org

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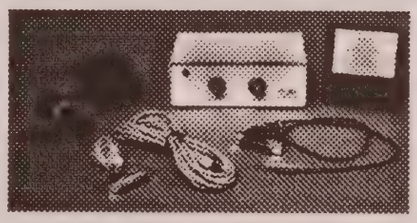

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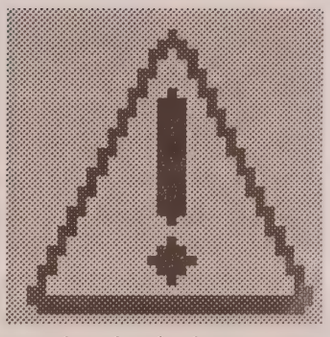
WHAT IS CYBERFRAUD?

by Bill Parker. W8DMR



A cyberham sets down at the computer to surf the various cybernets. Normally we are treated to viewing pleasure with little concern. We may choose to see information, or news items, even chitchat with another cyberham. All seems well and proper. Everything seems on the up-and-up.

The Internet, a fast growing electronic network of thousands upon thousands of computer users, is where many cyberhams gather to exchange ideas. But quietly lurking, an unsuspected evil force awaits to trap the unwary.

Beware of the high-tech scam about to descend! Danger, the Cyberfraud computer culprit has you in mind as a traget.

The cyberbums are ready to con you into giving them your credit card number. They will offer tempting get-rich-quick schemes. Offered may be health cures as phony as sleeping with a dead frog under your pillow. They have other subtle ploys.

No, they are not aliens from another planet. They are savvy telemarketers ready to present just about any fraudulent scheme you can imagine. These cheating artists, masters of high-tech chicanery aim particularly at senior cyberhams. Some of the scams have been around for years. The pyramid scheme that operates similar to a chain letter is but one example.

Do not let a respectable looking Internet site suck you into the temptation of making unearned quick profits. Maybe a few early-on investors will get back more than their original investment, but the vast majority will lose their contribution.

The Internet is an international network of many thousands of computers connected by telephone lines, and it is virtually unregulated. Any cyberham with their home computer connected thru a modem to this network can send and receive data, files, pictures, product information, sounds, and text ranging to porno.

A fraudulent Web site can spring-up over night, suddenly appear, collect your social security number and more, and then disappear even quicker. It takes very little to create what first appears to be a magnificent Web site, fraudulent or otherwise. Most Web sites are legitimate, but use caution and don't give away the password numbers to your savings account.

Fraud committed via the Internet breaks the laws associated with federal and state telemarketing fraud. To enforce these laws is entirely a different matter. Recovering lost money may take many years.

The scam artists could be in your home town or they could be located in Hong Kong, Bombay or who knows where. To shut down or prosecute fraudulent operators based in other countries, whose local laws may not forbid scams, is nearly impossible. Many of the operators simply ignore orders to cease and then disappear before they can be extradited.

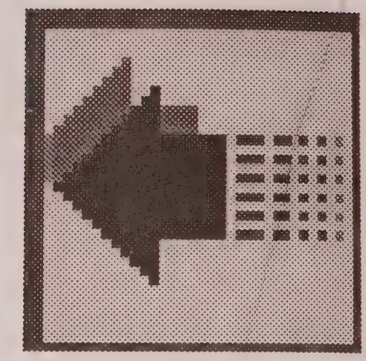
The Internet bad-guys may not be peddling anything. They just need enough information about your accounts to separate you from your money. Any E-mail inquiries about credit card, bank account, or social security numbers can be a warning sign.

Be aware of the request, 'We need to confirm your access code' or 'We wish to verify your credit card number' scams. Passing away information of this nature can deplete your bank funds and cause unauthorized huge bills to appear on your credit accounts. Sending uncoded credit card numbers across the Internet can be dangerous due to unscrupulous sites ready to intercept the information. It is much like someone listening to a phone conversation ready to misuse a private conversation.

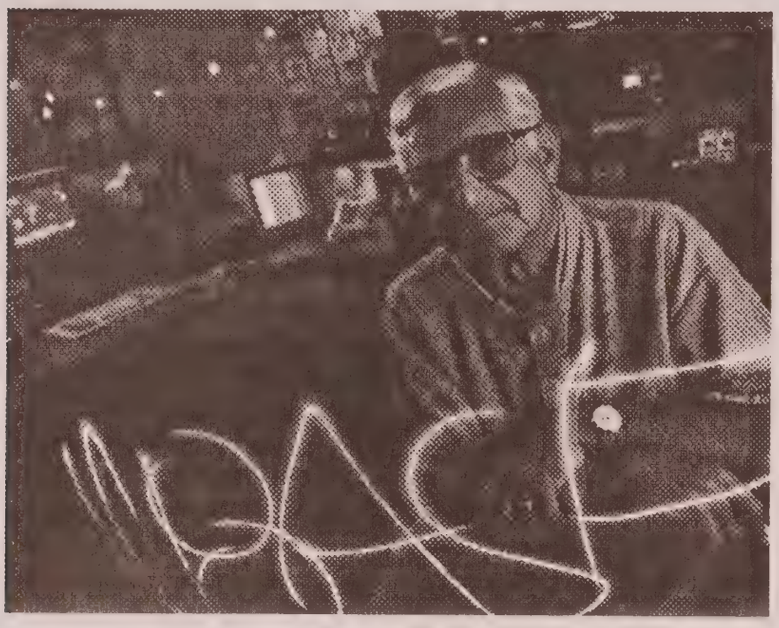
Foolproof Web sites are being developed to improve security. Even the very expert computer operators do not always spot cyberfraud criminals. The so-called experts, thinking they are on top of the situation, often are taken-in as easily as a novice. It is not a matter of how smart you are. Even the professionals such as attorneys, doctors, engineers, and hams, have lost money to the cyberfrauders. Cyberhams, like the average consumer, must be particularly on-guard. You are your own best defense, so when in doubt, don't pass it out.

Bill Parker - W8DMR

SLOW SCAN TELEVISION AND WEATHER SATELLITES



Fred Sharp - W8ASF



By way of an introduction, I'm Fred Sharp, W8ASF. I was licensed in 1946 and got my Class A (Advanced) in 1947. I have since tried for Extra twice and flunked both times. I'm now resigned to the fact that I really didn't want an Extra ticket anyway. What has this to do with Satellites and SSTV, nothing, and the next few paragraphs have nothing to do with them either. This being my first article for Cyberham I think it only proper to at least give you an idea of just what kind of guy I am, and where all my varied interests lie.

I can remember building a 5 meter transceiver (modulated oscillator, and modulated everything else) that used a single 201A tube. Well, I'm so old that I guess that tube is not even remembered at all. It was actually the granddaddy of most vacuum tubes. While there were others before it, the 201A was a well used work horse. This still has nothing to do with my topic. My first station consisted of a Breting 9 receiver and a home built 6L6 tri-tet oscillator with a 6L6 screen modulator and a 6L6 final amplifier. Don't forget the 80 rectifier. At the present writing I run a Kenwood TS830S with Clipperton L linear to a trap vertical in the back yard. Inasmuch as I live in a deed restricted area where antennas are not permitted, my vertical is next to a tall pine tree, painted the same color and my 40 meter antenna is made out of #26 copper wire.

I'm very active on SSTV and use a home brew LM9000 SSTV scan converter. I also use my 386DX40 computer as an SSTV transmit and receive station, incorporating at one time or another JVFAX, MSCAN the latest German GSH software. Oh yes, I also have Weather Satellite receiving equipment. There....I've said it!

The receiving of the first weather satellite picture on your own equipment can be likened to the thrill of a first DX radio contact. I'll never forget that either. Most of us Hams are thrill seekers and seeing the earth with all it's storms, clouds and weather is once again that real thrill. Although much has been written about setting up a satellite receiving station, the state of the art, or should I say software changes daily, so what I write bout today is really current for only a short while.

FIRST THINGS FIRST

The basic things necessary to watch satellite pictures are: A signal source, the proper antenna, a computer (I hope I didn't leave many out with that last item) an interface to connect the signal source(receiver) and the computer and some software available on most BBS's. Actually, the best source is the ARRL BBS and download either or all JVFAX71, MSCAN or GSHPC. All of this software is in compressed or zipped form. There are other commercial SSTV soft and hardware systems such as Software Systems Consulting, Multifax, Timestep, AEA and the list goes on. Some of the commercial stuff does a lot more than others, ie: some will permit you to overlay boundaries, measure cloud and land temperatures, but that's really another in this series of articles. Commercial units will be discussed later. For now we will stick to the freebies that will let you get your feet wet. I believe too, that a discussion of how all this works should be in a future article and for now we'll try to inspire you to enter the world of Polar Orbiting and Geostationary Weather satellites. Just a few simple facts; Polar orbiters orbit the earth about 500 miles up and cross the north and south poles as the earth rotates, which means that the whole world can see pictures from the American NOAA 9, NOAA 12 and NOAA 14 and the Russian Meteors 2-21 and 3-5. Reception is in the 137 MHZ band, actually 137.3, 137.4, 137.5, 137.62 and 137.85 MHZ are the frequencies used. Geostationary satellites like GOES 8 are received in the microwave range on 1691 MHZ (1.69 GHZ) and require somewhat more additional equipment like a dish antenna, preamp and downconverter (1.69GHZ to 137.5 MHZ). Goes 8 is in fixed or geosynchronous orbit with the earth, which means it appears fixed in the sky at an altitude of 22,300 miles above the earth. Goes 9 has just been launched and is now operational. Goes 8 is called GOES EAST and Goes 9 is GOES WEST. These satellites provide the same earth and weather pictures we all see on Television. Seeing weather at your home QTH is a lot more rewarding. With the aforementioned software like JVFAX you can computer enhance images and save them to disk in black & white or false color. The subject of weather satellites is enormous and I will try from being too wordy, for the first article, but there is much to say.

When I mentioned a "signal source", I was referring to a receiver or scanner that will receive FM signals in the range of 136 to 138 MHZ for the APT (automatic picture transmission) polar orbiting satellites. The GOES series operate in S band, or microwave which can be received, once you have your VHF station set up, by the use of a downconverter to convert 1.69 GHZ to 137 MHZ to be received on your scanner or receiver. The bandwidth needed to receive all the picture information from an APT satellite should be wide, compared to most FM receivers, which is around 15KHZ. We need at least 50 KHZ bandwidth. With smaller bandwidth you can receive a picture, but it will be missing a lot of resolution.

In my station I use a Kenwood R-2000 Communications Receiver with a VHF plug in that takes me from 118 MHZ to 172 MHZ. In order to widen the normal 15KHZ bandwidth to about 50 or 60, I replaced the 15KHZ FM filter with a .01 capacitor. If you have a receiver like mine, you're ahead of the game, if not, there are other options like Hamtronics R75A receiver kits, as I mentioned, scanners, some sold at Radio Shack and some commercial receivers like the VANGUARD FX-2E, complete with dual conversion and the capacity of eleven crystal controlled satellite frequency channels. Some of these model numbers may be changed and I encourage you to write me at CYBERHAM or contact me by email (f.sharp@worldnet.att.net) for latest information.
The VHF receiving antenna can be a set of crossed dipoles or as in my case a fancy quadrifiler helix.

At this point, I have whetted your satellite appetite, I hope, and suggest now that you obtain a copy of Ralph Taggarts "New Weather Satellite Handbook" from the ARRL bookstore. This magnificent book will give you all the knowhow to setup and operate a Weather Satellite receiving station, after which time, my weather satellite articles will have real meaning.

AND NOW..... "THE...REST...OF...THE...STORY" SSTV.....A GIANT STEP IN A DIFFERENT DIRECTION

The face of Slowscan Television has changed. A state of the art once dominated by hardware scan converters is now almost totally computerized SSTV. Naturally, a lot of us still have Robots and in my case, the LM 9000, but in many cases they are used only because there are accoutremental (nice word !) software programs like W5ZR's SCAN and N9AMR's HIRES that control Robots and the like and produce graphics,put pictures in memory and on disk, etc,etc. These software programs make it a complete package with control of the hardware. None of the software programs as yet, contain an integral "frame grabber" My thinking was, that the first one out with one would be the leader. My thinking has changed, along with the state of the art. It seems that it's not too important anymore to send a "just captured" live picture. Most things sent are still pictures of, "The ole house in Brookton", "Aunt Margaret's Calico cat with the one green eye", etc...etc. At the risk of being redundant,(my favorite thing), us builders, designers, mod developers and general putzing arounders are just out of favor now. SSTV'ers seem most content to send one picture after another. Maybe that's the way it really should be, although being at the worst end of the 11 year cycle, one doesn't have a band opening window with enough time anymore to engage in a long SSTV tete-a-tete. After all, WINDOWS took the mystery out of DOS by replacing it with a mouse. All you have to do is point it at a little icon and squeeze the trigger and.....voila!!, control!.....The older I get(and naturally the more unforgiving I get), the more things seem to have their glamour removed. I wonder how many kids still get a thrill out of hearing their first DX, SSTV, CW or SSB. Something has to come along to revolutionize SSTV, cause someday, guys will just get tired of sending pictures...."Hey Jim...here's another shot of the old '52 Chevy, only in this one, my brother-in-law's behind the wheel.

Maybe I'll just have to invent something myself. Last night I was listening to 14,230 and two malicious QRM'ers came on, not just with carriers, but swooping them up and down. I think I'll go for a walk and get the nasties out my system.....THERE .....that's better.

I guess JVFAX provides the most with little or no cash outlay, if you have even a teeny junque box. It's a great program and putting it along side the Robot 1200C (actually, running them at the same time) I find that JVFAX grabs the VIS code better than the Robot. If you miss the code, you have a job to get a picture started with the Robot. JVFAX just starts up when you push RECEIVE and is in perfect color sync. There is so much JVFAX around with MSCAN and GSH and Harlans SSTV for Soundblaster(Can't leave that out...he's my boss!"), I seem to have lost track of others like VESTER(not really user friendly) and PASOKON which is VERY user friendly and has great color reproduction by reason of its excellent interface. I hope PASOKON is doing well. It deserves it because it's well engineered. Nothing lasts forever. At one time I thought they couldn't make a finer car than a '41 Mercury!

MIRACLE DSP NOISE FILTERS

I was a holdout for noise filters for SSTV. Firstly because they start at $165.00 and secondly and most important, I didn't think they really worked. Well...I was really proven wrong after hearing a demonstration in NM1S's ham shack. (Love his phonetics: No Milk, One Sugar) I ordered the Timewave DSP-9. There is now a DSP-9+ and a DSP-59+ and I won't go into a long review of them, except to say that my line noise here is a disgrace. Everything from frying eggs to sharp, crisp buzz saws. Our electric utility, Florida Light & Power sent out their trouble shooter, Chuck Swinehart, who really knows his QRM and besides that, a really nice guy, who went out of his way to listen to my audio tapes of the line noise. He located a bad ground and it was fixed in less than a week. Now I have the noise back again, only worse. A call has been placed to Chuck again, but in the meantime my DSP-9 is a real lifesaver. Not only does it just about ELIMINATE the line noise, but if I get someone tuning up on the SSTV frequency or a heterodyne on frequency, I just push a little black button marked "tone" and the heterodyne is gone...gone...gone and the SSTV signal is not attenuated in any way. This type of filter operates by examining a characteristic of signals and noise called, "correlation" and

dynamically filtering out the noise. The degree of correlation is relative. Random noise such as white noise or static is uncorrelated. Speech is moderately correlated. Repetitive noise like a heterodyne or carrier is highly correlated. The DSP-9 measures correlation and filters out signals and noise that are outside it's correlation thresholds. There is little degradation of the desired speech or signal. The amount of noise reduction varies according to the correlation characteristics of the noise. Typical noise reduction ranges from 5db to 20db for random noise and up to 50db!! for heterodynes. I would never try to receive a SSTV signal without a DSP...no one should.

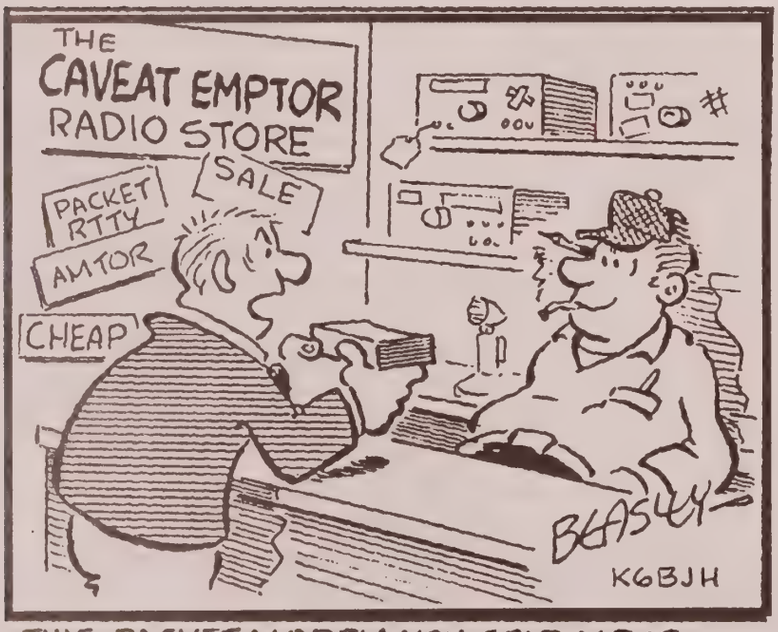
THE HOME STRETCH

Well, how do you like me so far. I'd really like to know. Some of you may know me from Spec-Com for the past ten years. I will be grateful for some feedback on just what you'd like to read.

In future columns I will be reviewing all the available SSTV software and hardware and all related hardware like scanners, etc, along with all Weather Satellite receiving software and hardware and related hardware like antennas, LNA's, Downconverters,etc. We will hopefully be publishing some schematics and photographs. The twin subjects of Weather Satellites and SSTV have much data and I look forward to bringing you news and new developments in both fields. For questions too important to wait, again, you can email me at f.sharp@worldnet.att.net

Ciao es 73

Fred Sharp W8ASF
f.sharp@worldnet.att.net



THIS PACKET MODEM YOU SOLD ME IS NOTHING BUT AN EMPTY CASE--- SAY, WHAT DOES "CAVEAT EMPTOR" MEAN, ANYWAY ?

NEW HAMTRONICS R139 WEATHER SATELLITE RECEIVER

If you are looking for an inexpensive, but very effective, wideband fm receiver module for 137Mhz weather fax reception, the new R139 Receiver from Hamtronics may be just the answer! Because a wide if bandwidth is required in a receiver for good quality reception, most conventional receivers and scanners are not suitable without extensive modification.

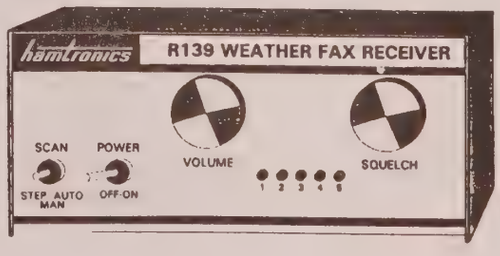
Hamtronics has made special versions of their receivers available with wideband I-F filters and detector optimized for NOAA APT and Russian Meteor weather satellites. The R139 is a new, improved, 3rd generation receiver designed for WeSat reception. It combines the circuitry of the previous R138/AS138 modules in one unit with a cabinet and power supply, and it incorporates all of the suggestions customers have made.

The R139 Receiver is crystal controlled with five channel oscillators to cover all five of the popular US and Russian satellite frequencies. All crystals are supplied with the unit. An extensive instruction manual is provided, unlike off-the-shelf scanners.

The R139 not only has manual controls to select the channel, but also has a scan circuit built in to look for an active satellite overhead. This allows you to be away from the shack and still monitor the various weather satellites. If the R139 detects a satellite, the scanner stops on that channel and turns on a tape recorder control output. This can be used to activate a tape recorder, allowing you to play back the tape into your demodulator unit whenever you have time to reproduce the satellite images on your computer. LED's on the front panel indicate which satellite is received.

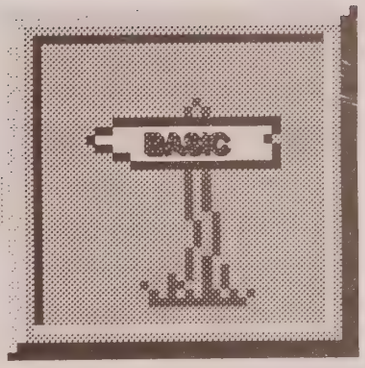
The R139 Receiver has very good sensitivity: typically 0.2uV. The receiver has adjustable audio output to drive a speaker and your wesat demodulator. A squelch circuit mutes the audio when no satellite is in range. With a kit price of only $159 in module form, the R139 Receiver is quite a bargain. If you do the assembly yourself, a signal generator is required for alignment. The R139 is also available in kit form with an attractive aluminum cabinet and a 12 Vdc power adapter for $189. If you prefer, the R139 is available already wired and tested in a cabinet with the power adapter for $239.

For more details, write to Hamtronics, Inc., 65-1 Moul Rd, Hilton NY 14468-9535 or call 716-392-9430 (fax: -9420). Ask for a data sheet on the new R139 Receiver. Please tell them where you saw this announcement.



Basically Brian - "Easy Street"

By Brian Boyer



About six years ago I picked up a book at the local bookstore on creating Microsoft Windows applications in the "C" programming language. After briefly examining it, I could tell that this would not be an easy or familiar task, but I bravely purchased it and went home to start on my first application. After an hour or so, I started to question the judgment of my purchase, but I still had the receipt! After another hour of following confusing calls using Pascal parameter passing conventions and pointers to things of questionable origin, I decided that I would return the book for something more useful. Yet, I could not help thinking, "Windows programming should not be this hard!"

As time passed I kept looking for that magical book that would comfortably launch me into the world of Windows programming. I picked up a pretty decent book on the Microsoft Foundation Class library, or MFC. MFC provides a relatively easy way to use Visual C++ and object oriented methodology to create Windows applications. I also picked up a couple books on Borland's counterpart Object Windows Library, or OWL. Both MFC and OWL provide a much better solution than the original Windows API, but still have a very steep learning curve to even those familiar with object orientation.

All the books that I purchased up to this point described programming Windows 3.x applications. They did not even mention Windows NT or Windows 95. How easy would it be to port my applications? Would they run properly when I did? These are serious questions because I found that it took hours to create simple programs even when I used MFC or OWL. I could not imagine rewriting everything for a new operating system, especially if my livelihood depended on it.

Well my friends, there is light at the end of the tunnel, and it is not a train. It is the brilliant light of creativity sparked by a product from Microsoft called Visual Basic. Visual Basic allows programmers to concentrate on creating their application and not worrying about all the complex syntax. Moreover, with the advent of Visual Basic 4 applications can be written for all of Microsoft's operating systems without rewriting any code. Finally, there is a huge base of software developers creating VBX, OCX, and ActiveX plug-ins for Visual Basic that extend its functionality which allows application writers to leverage the work of other developers. So buckle up, because in a few moments you will be creating Windows applications faster than "Speed Racer heading down easy street..."

One of Visual Basic's distinct advantages over other development environments is its emphasis on the design stage. It allows the programmer to draw Windows controls (command buttons, radio buttons, text boxes, list boxes, etc...) on forms (Windows) and associate program code with them at a later time. Figure 1 shows the design stage.

The design stage consists of several components. The main Form, in the center, is the user's interface to the application. The Toolbox, to the left, is a collection of items that can be added to the form like buttons, text boxes, and check boxes. The Properties window, at the top right, allows the programmer to change the characteristics of selected items, like forms or buttons. For example, we can change the caption in the title bar of our application by modifying the caption field of the main form via the Properties window.

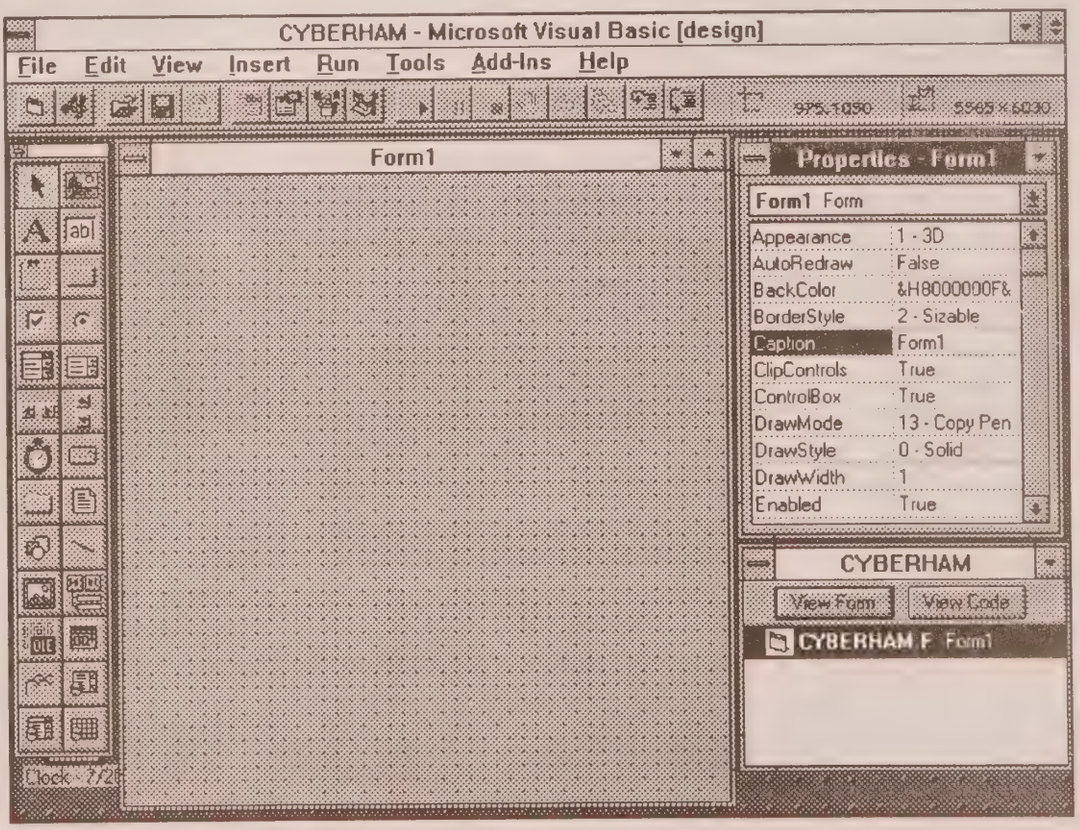


Figure 1 - Visual Basic Design Stage

The Menu and Tool Bar, at the top, allows the programmer to open and close files, add new forms and modules, edit controls and text, and much more. And finally, the project window, at the bottom right, contains the list of files used to create the application.

Without any further delay, let's create a simple windows program. How about a rudimentary calculator that will perform addition, subtraction, multiplication, and division. Figure 2 shows the completed "CyberHam Calculator" in all of its glory.

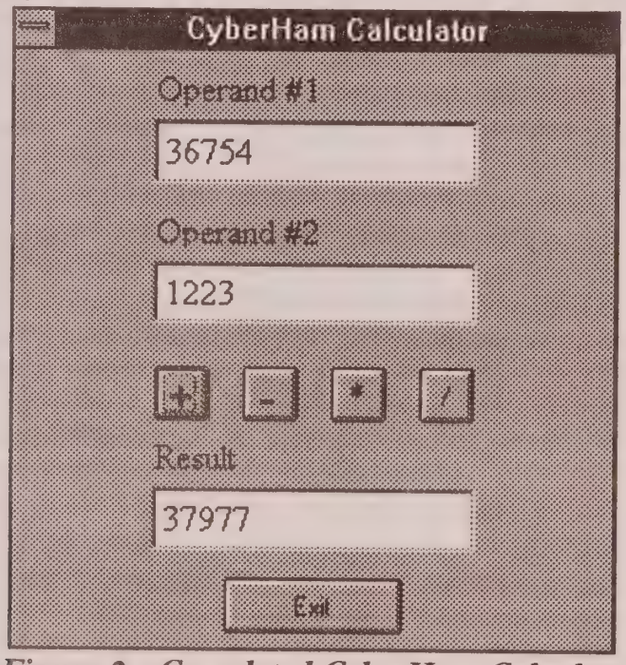


Figure 2 - Completed CyberHam Calculator

This application consists of a form containing three text boxes where the operands are entered and the result displayed, three labels (Operand #1, Operand #2, and Result), and five command buttons (+, -, *, /, and exit).

Start Visual Basic, or if you already have it started select "New Project" from the File pull down menu. A fresh "Form 1" will appear in the center of the screen. First we need to change the name of the application in the header of this form to "CyberHam Calculator" and also prevent the user from sizing the window at run time. Both of these tasks are accomplished in the Properties window. If the Properties window is not on your screen, select Properties under the View pull down menu, or simply press the F4 key. Now click the "caption" field in the Properties window. Type in "CyberHam Calculator" to replace the word "Form1." Notice that as you type in the caption field the result is displayed in the header portion of the form. Next, we need to prevent the user from sizing the window at run time. To do this, click the "border style" field which will cause the arrow of a list box appear. Click the arrow, and select "fixed single." Let's run our calculator program now by pressing the "play" button in the Toolbar which is the arrow pointing to the right . It's not much of an application right now, but notice that "CyberHam Calculator" is displayed in the header, and the border is not scalable. Press the "end" button, which is two buttons to the right of the play button, in order to quit the application.

Next, we need to add the text boxes that will allow the user to enter the two operands and the result. In order to do this, click the text box tool in the Toolbox. This is the second button from the top in the right column of the Toolbox (it is a box with a "ab|" on it). Now, click and drag, a text box on the "CyberHam" form. A text box with the word "text" should appear upon releasing the drag. Repeat this procedure twice more, creating two more text boxes of the same size. Now we need to set the properties of these text boxes. Click the first text box in order to select it. In the Properties Window, select the "text" property, and erase the word "text1." The text box on the form will now be empty. Next , we want to name the command so that we easily reference it in the future. Select the "Name" field in the Properties Window and change it to "txtOperand1." The name is prefixed with "txt" to indicate that this is a text box. This type of naming convention is very handy during the programming stage which we will see later. Next, we want to use a nice big font for our calculator. Scroll up to the "font" field in the Properties window and double click it. A font selection dialog box will appear. Select "Times New Roman" with a point size of 12, and press OK. That's it for this text box. Repeat the above steps, substituting "txtOperand2" in the

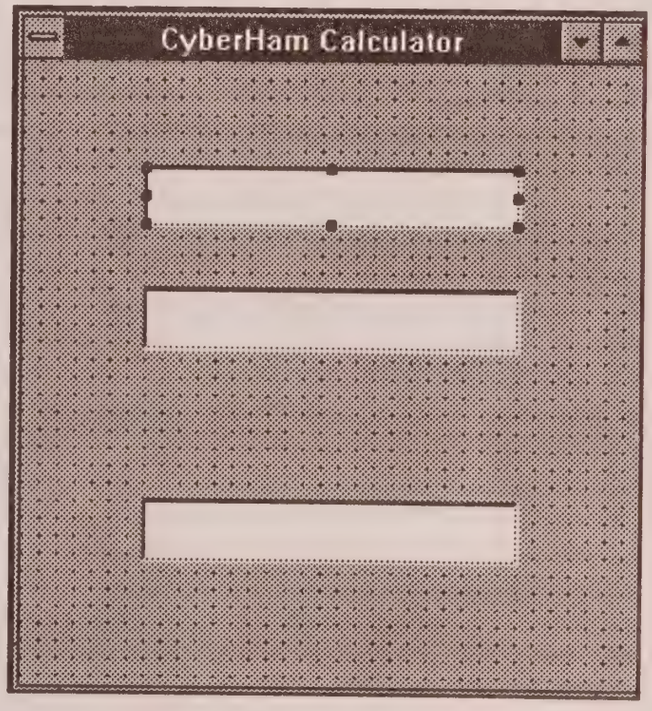


Figure 3 - Text boxes Added

"name" field for the second text box, and "txtResult" for the third text box. Move the text boxes approximately to the positions shown in Figure 2 by clicking and dragging them. Your application should look something like figure 3.

Next, let's add our command buttons, which will perform the arithmetic operations. Click the command button tool in the Toolbox (third button from the top in the second column). Drag out a small button between the second and third text boxes. Drag out three more command buttons to the right of

this first button. Note: you may need to scale the form, text boxes, and the buttons to make everything look centered. Now, change the properties of the command buttons to the following (left to right):

Command button #1
Caption = +
Font = Times New Roman (12pt)
Name = cmdAddition
Command button #2
Caption = -
Font = Times New Roman (12pt)
Name = cmdSubtraction
Command button #3
Caption = *
Font = Times New Roman (12pt)
Name = cmdMultiplication
Command button #4
Caption = /
Font = Times New Roman (12pt)
Name = cmdDivision

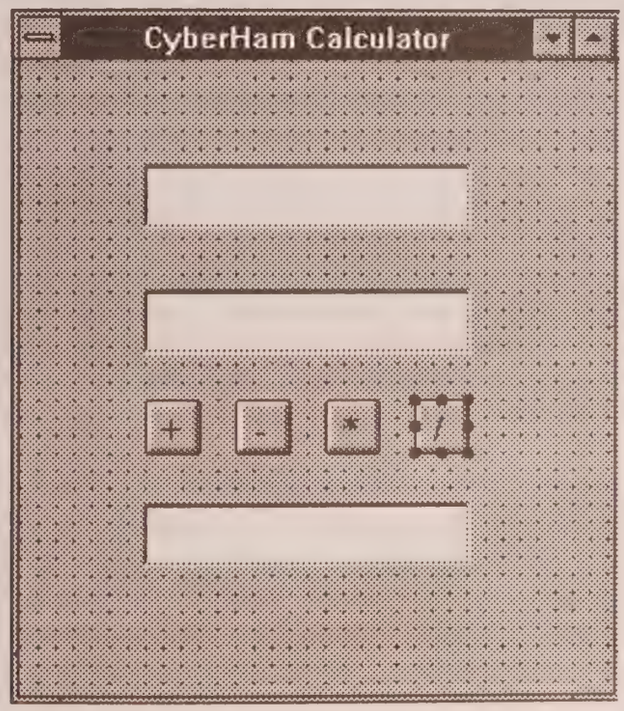


Figure 4 - Command Buttons Added

Your form should now look like figure 4. So far, developing "CyberHam Calculator" has been a series of clicks and drags. Like I said before, "easy street." Now let's add the logic of the program.

Windows applications respond to "events." An event can be caused by clicking a button, changing a text box, or just about anything the user does. Our calculator will react to the user clicking one of the arithmetic operation buttons. So, we need to define what to do when each of these buttons are clicked. For example, when the addition button is clicked, we want to take Operand1 and add Operand2, then place the sum in Result. Let's do just that! Double click on the addition button on the calculator form. A dialog box will appear that has some BASIC code in it ("Private Sub cmdAddition_Click()"). This is the subroutine that executes when the addition button is clicked. Put in the following equation.

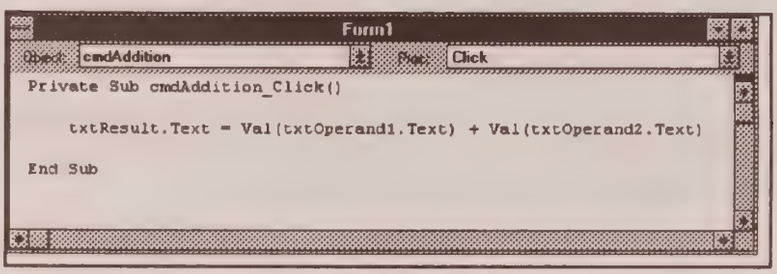


Figure 5 - Subroutine for cmdAddition

This equation says, "Display in the Result text box the sum of the numeric value of what is contained in the Operand1 text box, and the numeric value of what is contained in the Operand2 text box." Now, let's be lazy. Select the equation by dragging across the entire line so that it completely highlighted. You only what the equation portion, not the subroutine declaration or "End Sub." Once you have it highlighted, select "Copy" under the Edit pull down menu. This equation is now on the clipboard. Close the dialog box containing the addition code, and double click the subtraction button. The cmdSubtraction_Click subroutine should be displayed in a similar dialog box. Simply paste the equation from the clipboard into this subroutine and change the "+" operator to a "-" operator. Repeat this step for the multiplication and division buttons substituting with "*" and "/" respectively. It is important to add the lines detailed in figure 6 to the cmdDivision_Click routine in order to prevent the user from causing a divide by zero error. After these lines are added, a message box will appear if the user attempts to enter a zero, or does not enter a value for Operand 2. Your core logic is now in place. Run the application and verify the that the buttons work properly.

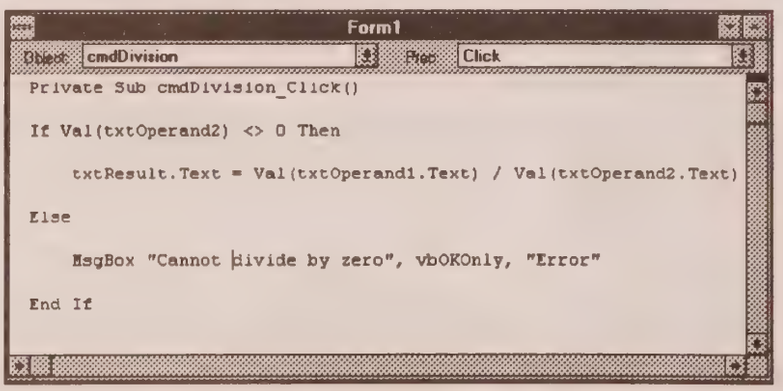


Figure 6 - Prevent Divide By Zero

Next, we need to provide a means to exit the program. We do this by adding a command button to the bottom portion of the form. Change the Caption field to "Exit" and the Name field to "cmdExit." Double click the exit command button on the form in order to bring up the click event subroutine. The command "End" is used to exit a Visual Basic program, so enter "End" in the same manner that the equations were entered earlier. Now run the program and instead of pressing the stop button, click the Exit button.

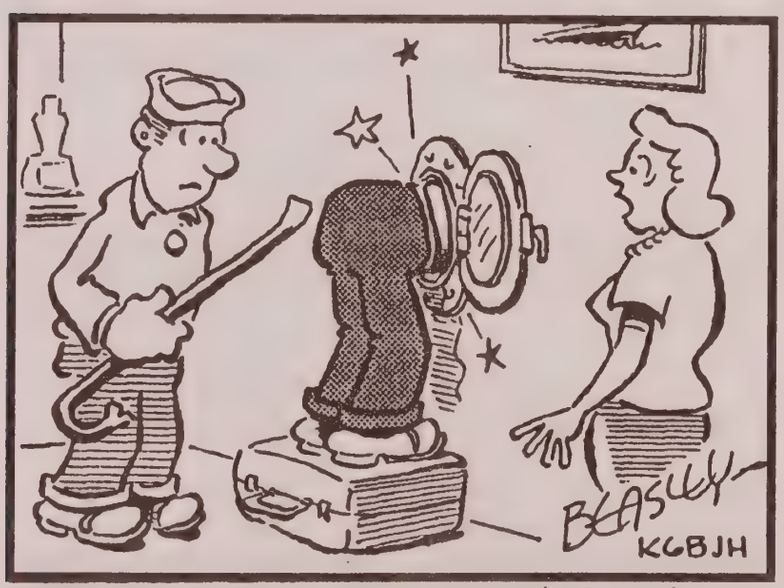
The only thing remaining are the labels "Operand 1", "Operand 2", and "Result." To place these select the label tool which is the second button from the top in the first column ("A"). Place a label above each text box as a description. Change the Font field of the labels to Times New Roman (12pt). Also, change the Name fields to "lblOperand1", "lblOperand2", and "lblResult" respectively. If you have not saved the project yet, do so now under the File pull down menu.

Up until now, we have been running the application by pressing the play button. In order to create an executable version of the program use the "Make exe file..." menu item under the File pull down. A filename dialog box will appear prompting for the name of the executable you wish to create. By default the project name is used, but if you want to use a different name, simply type it in and press OK. NOTE: Visual Basic programs will not run without the VBRUN400.DLL (for VB Version 4) present on the target system, so it is necessary to include it with the executable.

Congratulations! You have just created the "CyberHam Calculator!"

This is a very simple application, but it is a good example of how quickly you can create Windows applications with Visual Basic. In the coming months, I plan on showing you how to use Visual Basic to create multimedia applications that utilize AVI clips, MPEG video, wav audio, sprite animation, and more! I will also show you how to incorporate the Connectix Quick-Cam into your applications. Finally, I would like to show you how easy it is to create a 32-Bit Web browser. But you are the boss, so if there is something you would like to see, don't hesitate to ask.

Brian Boyer
bboyer@earth.inwave.com



HE WAS HANGING OUT THERE WORKING MARINE MOBILE WITH HIS HANDHELD RADIO AND THE PORTHOLE GOT WET AND SHRUNK!

NEW HAMTRONICS CTCSS ENCODER/DECODER MODULE

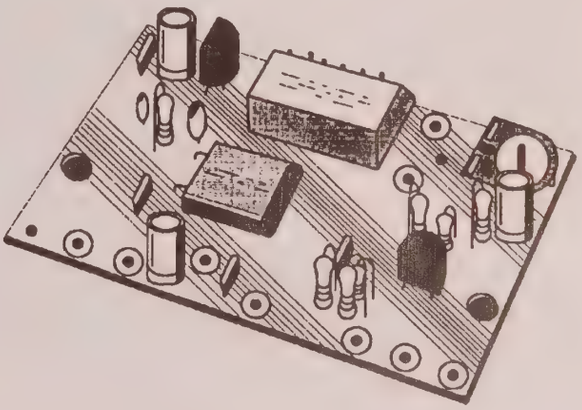
Hamtronics has announced a new version of their long-popular Subaudible Tone Encoder/Decoder module. The new TD-5 module has several new features, including crystal control for precise tone accuracy and a convenient DIP switch for tone selection without test equipment.

You can easily adapt your existing fm transceiver to access all your favorite closed repeaters with the new TD-5. It encodes all standard subaudible tones. If you only need one tone, you can select it with the DIP switch on the module. If you need several tones, their thorough manual shows how you can set up a front panel switch to select between preset tones for several repeaters. A pot on the board allows you to set the transmitter deviation for the tone separately from your microphone audio. General information in the manual helps you install the module in any transceiver.

The new TD-5 is tailored specifically to provide closed access for repeaters. A switching transistor is provided to inhibit the COS line to the repeater controller to prevent repeat operation if the tone is absent. A control line allows the CTCSS function to be defeated by remote control when open access operation is desired.

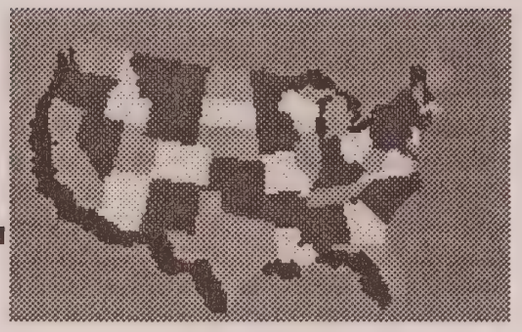
Best news is that the new TD-5 module is very economical. It is available either as a kit for only $39 or factory wired and tested for only $59.

For more details, write to Hamtronics, Inc., 65-1 Moul Rd, Hilton NY 14468-9535 or call 716-392-9430 (fax: -9420). Ask for a data sheet on the new TD-5. Please tell them where you saw this announcement.



AUTOMATIC PACKET REPORTING SYSTEM (APRS)

Bob Bruninga - WB4APR



Mission Impossible?

For decades, techie movies have used dashboard mounted map displays for tracking elusive spys and precious cargos. With the advent of hand held Global Positioning Satellite receivers for under $195, such fictional technology which used to cost in the $20,000 price range can now be added to any vehicles from boats to bicycles to backpacks using amateur packet radio. By connecting their radios with a GPS and a laptop running APRS (Automatic Position Reporting System), HAMS can see others stations within their radio range on flexible map displays. Not only does this elevate any field day or mobile activity into a James Bond class event, it is ideal for maintaining an up-to-date tactical picture of what is going on at any emergency, severe weather situation or public service event.

APRS is a radical change to packet radio that adds a MAP display to a special AX.25 protocol and routing scheme to communicate the positions of stations, objects, vehicles and other graphical information in real-time. It was designed to improve the value of HAM radio in emergency and dynamic situations or public service events by taking advantage of this visual tactical display and highly flexible network. In the past, packet radio has mostly been best used for passing volumes of message traffic from point-to-point but has seen little use for real time events where information has a very short life time. APRS reverses this trend by rapidly communicating small packets of information to all stations simultaneously.

Since a "picture is worth a thousand words", a MAP showing the tactical positions of all other stations and objects concerning a radio network is invaluable!. Maps at any scale from the whole world for HF and satellite communications down to the INSIDE of a a HAMFEST arena are possible! In addition to geographical map displays, APRS also handles and sorts operator Messages, Bulletins and Status packets onto separate functional screens. Versions of APRS are available for DOS, Windows and the Mac computers.

APRS BROADCAST PACKETS:

The advantage of APRS over conventional packet is that it avoids the complexity and limitations of a connected network. APRS sends information as unnumbered information packets in a broadcast mode that permits any number of stations to exchange data just like voice users would on a voice net. Any station that has information to contribute simply sends it, and all stations receive it and log it. APRS packets are redundantly transmitted periodically to assure delivery. After each trasnsmission, the period to the next transmission is doubled so that older information is given less priority than newer information.

DIGIPEATER ROUTING:

An APRS operator needs no prior knowledge of the network in order to copy and send packets because APRS takes advantage of the capability of any TNC at any station to serve as a digipeater using a second callsign or ALIAS. ALL APRS stations are initialized with the generic callsign alias of RELAY so that any station can always get a packet out, just by sending it via RELAY, or RELAY,RELAY. After monitoring an APRS channel for 10 minutes, every APRS station and DIGI will probably have appeared on his map. Using this visual geographic information the user can then use more creative and specific routes for his intended area of interest. Similarly, all WIDE area APRS digipeaters are given the generic alias of WIDE and a second alias of RELAY. The typical path for a mobile is to use the path VIA RELAY,WIDE so that he is digipeated whether he is in range of a WIDE(RELAY) or any other APRS station. This will usually suffice for typical radio nets.

APPLICATIONS:

Although APRS was initially designed for tracking moving vehicles, it soon found applications in all facets of amateur radio. Any communications that are concerned with the location of ANYTHING can be tracked with APRS.

Weather nets, SKYWARN, Hurricane tracking
Vehicle tracking, cars, boats, aircraft
Balloon tracking
Civil Air Patrol search and rescue
Coast Guard Auxilliary search and rescue
Frequency Coordination
Direction finding, both manual and automatic
Plotting satellite contacts,
Monitoring DX clusters and plotting all spots automatically
Marathon and other event tracking
Plotting all stations on all freqs for frequency coordinators
Meteor Scatter using the very short APRS packets
HF beacons (lets you see where the band is open)

MAP DISPLAYS - This is the most interesting function of APRS, to display the locations of all stations and objects. Maps from 100 yards up to 8000 miles can be displayed showing the positions of all stations and posits. Stations reporting a course and speed are dead-reckoned to their present estimated position. Databases of most National Weather Service stations and the Civil Air Patrol search and rescue grid are built in. You can zoom in to any point on the globe! There are megabytes of maps available for APRS and more being made every day. Using the US Geological Survey $32 CD ROMS, you can make a street level APRS map in about an hour.

Besides the MAP displays, there are many other display pages that collect information from packets on the channel. These displays give instant access to all the data in the network and permit operator to operator messages and bulletins to multiple stations simultaneously. Other interesting displays include the HEARD LOG which maintains a count of the number of packets from each station per hour. These statistics are ideal for showing connectivity in the network over varying paths, such as HF, or to see when stations enter and leave the net.

APRS MOBILE VEHICLE LOCATION SYSTEM FOR VOICE NETS:

Since maintaining knowledge of the location of all stations on any network is a primary function, many nets permit APRS position packets on their voice channels to inform all stations of their locations without the need for constant voice reports and updates. This is a lot easier than keeping paper logs and plots that are never up to date. By permitting an occassional packet on the voice channel, this eliminates the need for dual radios (one for voice and one for APRS position reports) at all stations. Recognizing this move towards GPS position reporting for all mobiles, the APRS MIC ENCODER was designed to provide mobile position reporting without the requirement for a TNC, and additional radio and antenna.

The APRS MIC ENCODER appends a very short 0.3 second position tone burst on the end of your voice transmission. This allows automatic vehicle tracking in any vehicle with a two-way radio! The MIC ENCODER is just a black box on your dashboard that plugs into the MIC jack of any radio. A GPS and

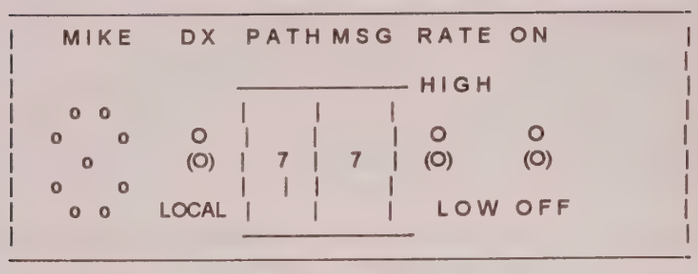


FIGURE 1. This is the 1 by 4 inch front panel of the APRS MIC ENCODER

your mic plug into it, as shown in Figure 1. It has a number of front panel switches to select any one of 7 status messages, and to select various paths for your position report to take.

The combination of the LOCAL/DX switch and the PATH thumbwheel switch gives 4 bits of routing information, and the second thumbwheel switch allows the operator to select 1 of 7 pre-defined messages. The Rate switch allows the operator to select the HIGH rate for frequent reporting and a four times lower rate for benign operations.

These APRS packets can be made transparent to the users on a properly configured voice repeater. Since the packet is only 0.3 seconds long, a TNC at the repeater site detects the packet and instantly MUTES the repeater OUTPUT so none of the voice users hear it. This 0.3 seconds is minimal compared to the typical 1 second courtesy beep found on most modern repeaters. APRS gets such a short packet by encoding the entire position report into only 12 bytes! Once the packet is heard by the repeater receiver, a TNC digipeats it NOT onto the repeater voice channel but onto the local wide area digital APRS tracking channel. Since all position reports on all frequencies are digipeated onto the single APRS tracking channel, the APRS system can keep track of ALL mobiles on ALL repeaters!

To keep these position reports as short as possible, the APRS MIC-Encoder encodes all digipeater routing information into only 4 bits. These four bits allow for local and longer distance reporting, omni or directional, and provision to control the direction of propagation north, south, east or west. The special TNC at the voice repeater recognizes these bits and regenerates the packet with appropriate conventional routing paths.

INTERIM OPERATION: Until the new special APRS Voice Repeater TNC is completed, the APRS MIC ENCODER can operate in the MIC-1 configuration. In this configuration it includes the normal digipeater UNPROTO path in its transmitted packets. These can be up to a 0.6 second long. Using these MIC-1 formatted packets, any standard TNC with true DCD can be placed at the voice repeater to get an initial operating capability.

OPERATIONS:

STATION TRACKING. Although APRS automatically tracks mobile packet stations interfaced to GPS or LORAN navigation, it also tracks perfectly well with manual reports or GridSquares.

Additionally, any station can place an object on his map including himself and within seconds that object appears on all other station displays. Whenever a station moves, he just updates his position on his map and that movement is transmitted to all other stations. To track other event assets, just one packet operator can monitor voice traffic and use his cursor to maintain the positions and movements of all assets on his screen. All other displays running APRS software will display the same status. For predictable events such as marathons, and other races, the automatic Dead Reckoning features of APRS can be used to provide smooth tracking of manually updated objects. Using APRS to dead reckon positions requires much less frequent position updating and frees up your limited number of GPS trackers for those assets that are not predictable, such as race officials and service vehicles.

SPACE APPLICATIONS: APRS is an excellent application for the effective use of orbiting packet digipeaters such as SAREX, the PACSATS and the SAFEX experiment on MIR. Past SAREX activity required a total of 5 successful packets. for each station. Not only does APRS reduce this to one packet, but it also gives a much more interesting display as it plots the locations of all stations heard. A special version of APRS called APRtrak was donated to the AMSAT software library. It compresses your position into a gridsquare and transmits it in the TO address of a very short packet. Similarly, it plots on the map any such stations heard. APRS has been experimentally used twice in space. In January 1996 on the University of Maryland SPRE experiment that flew for 18 hours from the shuttle, and during normal SAREX activity on mission STS-78 in June.

FOX HUNTING OR DIRECTION FINDING: APRS is an excellent tool for plotting the location of a hidden transmitter, balloon, or interfering signal. APRS will display the intersection of bearing lines from a number of reporting stations and also overlapping signal strength contours if only signal strengths are reported. Finally, APRS includes the Fade-Circle Search and Rescue technique which can be used by a mobile with only an OMNI antenna to locate a hidden transmitter.

To use APRS for DFing, each station having a bearing report or a signal strength on the target, simply enters that bearing using the OPS-DF command. His station will then not only report his location, but also a line of bearing or signal strength contour. All stations running APRS will see any reported DF bearing lines and overlapping signal strength contours on their maps. Even with signal strengths alone (which anyone with ANY radio can report), the location of the signal can be isolated down to a few miles or neighborhood. This OMNIdirectional DFing using only reported signal strength is a VERY POWERFUL application for APRS. Further, APRS can track any DF vehicles using GPS or LORAN device on board. There is an optional Dopler DF registration for direct connection to a Roanoke or Doppler Systems DF unit for automatically plotting and transmitting instantaneous DF bearings.

WEATHER STATION REPORTING: APRS position reports can also include the wind speed and direction, as well as other important weather conditions. APRS supports an optional serial interface to the ULTIMETER-II home weather station. With this interface, your station includes WX conditions in your position report for display at all other stations in the network. All weather stations show up as a bright blue circle, with a line indicating wind speed and direction. The NEXT command in APRS will successively highlight each WX station in turn, so that all WX reports can be had at a glance. Optionally, the temperature, barometer and wind speed can be shown next to each weather station instead of their callsigns. APRS also has a database of the locations of most National Weather Service sites for instant display. APRS can also crunch a file of NWS hourly WX conditions and update all NWS stations on the map. Finally, APRS users can set WX alarms and be alerted when WX conditions exceed those values.

DX CLUSTERS: The positional display and real-time user communications makes APRS an ideal tool for the DX cluster user. Not only does he get to see all DX spots on the map at the instant they are transmitted to even the first cluster user, but by operating in the monitor only mode, he has reduced the overall packet load on the DX cluster. This is a benefit to everyone on the channel. Also the APRS monitoring station will see the SPOT as soon as the first station gets it, rather than later on down the list.

These are just some of the many fascinating applications for APRS. To date APRS has been used at numerous marathons, walkathons and special events. It has been installed on ships, boats, airplanes and balloons. GPS trackers have been installed in a football helmet, a model of the olympic torch and even on cows! With the advent of GPS, EVERYTHING can be tracked! APRS was used at the olympics to maintain tracks on four TV camera equipped motorcycles and four overhead helicopters during the road cycling, marathon, and other outdoor events.

APRS, MacAPRS and WinAPRS are available as SHAREWARE on most HAM radio bulletin board systems. There is also an APRS SPECIAL INTEREST GROUP on the internet. Send SUBSCRIBE message to listproc@tapr.org and include the words subscribe aprssig in the body of the message. You may download these APRS programs via FTP from tapr.org in the tapr/SIG/aprssig/files directories.

Registration is $29 for APRSdos and $60 for Mac and WinAPRS.

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Glen Burnie, MD 21060

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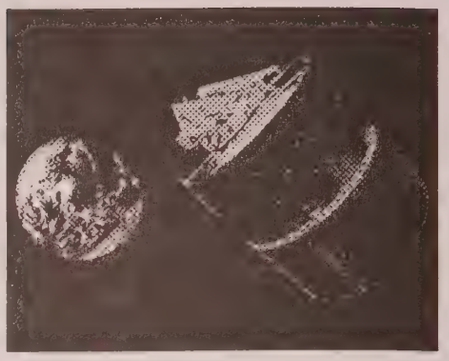
Satellite Tales - From the Ground Up

by Terry Sellick WA9TTY



I had been thinking about checking out ham satellite communications for several months, when Gene WB9MMM suggested writing a column about beginning satellite communications. At first I was a little apprehensive about the idea. But as time went by, it seemed like a good way to launch (pun intended) a new interest, and let others share the experience - benefit from my successes and learn from my mistakes (few, hopefully).

I'll be starting my satellite station from the ground up. I have some HF gear and a 2m / 440 HT. I will be adding a 2m (and possibly 440) all mode rig, just as soon as I convince the XYL. Current antennas are verticals and dipoles. I have always liked tinkering around, building antennas (not to mention the cost savings), so any new antennas for satellite work will be constructed. I'll be reporting on that also.

I have a computer running Windows 95, OS/2 and Linux, so I will be reviewing programs for these different operating systems. I will also give pointers to Web sites and BBS's which offer satellite specific software or information.

The bi-monthly format of this magazine and article lead-time prevents my telling you about current events in a meaningful manner, but we'll try to work around that by suggesting Web sites which offer up-to-date information.

The first task I had was to learn more about the whole process. My first step was to purchase "The Satellite Experimenters Handbook", by Martin Davidoff - an ARRL book. I can't begin to review this book - I'm still in the process of reading it! All I can say is that if you are interested in learning more about satellite communication, borrow this book from the library, a friend, or better still - buy your own copy. This book covers the whole gamut on ham satellite communications. It includes history of ham satellites; fundamentals - getting started, tracking (most important), antennas, receiving and transmitting; advanced topics such as satellite orbits, tracking, weather, tv and other satellites, and many, many other topics. It also includes a very handy glossary which defines the satellite jargon. It is an excellent reference and includes all the information that you will need to start a successful ham satellite station.

At first I will be looking at the satellites which are reachable with the gear I have. I'll be looking at the RS-10/11 and RS-12/13 satellites using Mode K (15m uplink, 10m downlink) and then moving on to Mode KA (2m uplink, 10m downlink). This is a reasonable and inexpensive starting place for most hams, and will give you an idea whether or not satellite communications is for you. I will start first with CW/SSB and then add packet later as finances allow.

Next time I'll get into the issue of satellite tracking. These satellites are not geostationary (fixed at one point above the earth), like your basic TV satellite where you plop down a dish, point it and forget it. These babies move around - a lot, and are pretty quick about it, too! If you can't track it, you can't locate it, or talk to anyone else through it. Don't worry though, you don't have to be a rocket scientist to track satellites (you just knew that I was going to say that sometime). There is an easy graphical method of tracking included with "The Satellite Experimenters Handbook" called OSCARLOCATOR. There also several computer programs for tracking satellites. Next time I'll review the computer tracking program SatTrack V3.1 for Linux.

In the mean time, check out these Web sites:

ARRL: http://www.arrl.org

AMSAT: http://128.54.16.15/amsat

The ARRL Web site contains all manner of information on ham radio in general. It also has info on SAREX - the Shuttle Amateur Radio Experiment which allows shuttle astronauts to communicate with students and teachers through ham radio. The next SAREX mission is STS-79 scheduled for September. Fact sheets on the mission, QSL information, and much, much more can be found here. You will also find other links to NASA, Johnson Space Center, and the Goddard Amateur Radio club. Check it out for yourself!

The AMSAT Web site is sponsored by the Radio Amateur Satellite Corporation. AMSAT is "a worldwide group of Amateur Radio Operators who share an active interest in building, launching and then communicating with each other through non-commercial, Amateur Radio satellites". AMSAT was created to continue to follow in the footsteps of Project OSCAR - a group on the west coast which built and launched the first ham satellites. Memberships in AMSAT are available for $30 a year, includes the AMSAT Journal, and software discounts. 50% of membership dues are allocated to spacecraft development. Information on joining AMSAT can be found here, along with spacecraft information, downloadable software, current Keplerian elements (tracking info), mailing lists, BBS info other Web sites, and still more. This is another must see Web page!

By the next issue, I hope to have successfully completed several QSO's through RS-10/11 and RS-12/13. I'll tell you about (Pun alert) the ups and down, what's coming over the horizon, try to track down some more interesting Web sites - I better shuttle off now, I got a lot of things to do! 73 and see you next orbit.

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The text contains eight chapters and five appendices. It describes the Radiopaging Code No. 1, also known as POCSAG; lists what's needed to monitor paging; investigates the inner guts of a typical pager - both the FM receiver board and the decoder board; outlines procedures for recrystalling pagers; suggests where to purchase pagers for amateur use; describes how to set up an amateur station for paging; and describes the paging cormnands and paging capability added to the Kantronics KPC-9612 series packet modems. The appendices include a glossary, frequency tables, a typical pager specification, enlarged figures for transparencies for overhead presentation, and a bibliography.

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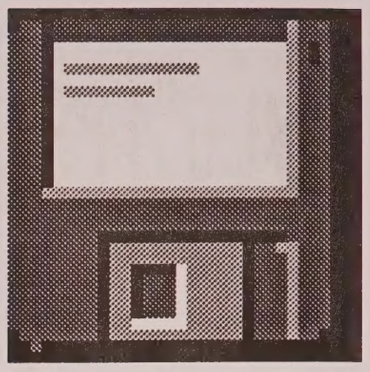
Shareware Reviews

By Ronnie Cohen - KF4GHG



SUPER MORSE

Super Morse is an excellent tool for anyone who wants to learn or improve their Morse code. The program is mouse supported, menu driven, includes online help and has easy to understand documentation. Super Morse is loaded with options and works on any IBM compatible system that has 384K of memory, a high density floppy or hard drive.

It is easy to see that the program was developed by a ham who knows the meaning of learning Morse code. The program's desktop and menu systems are user friendly and loaded with options. You can configure the program's colors and parameters to meet your own needs. Super Morse's desktop displays code parameters to help you follow you progress. The status line displays code speed standard, sound output status, elapsed time, license class, speaker tone, word and character speed. The highlighted menu on top displays the option you have selected.

Super Morse's main menu system has seven main options. In addition to a main help option, each menu's submenu has a help feature to guide you along. The first two main menu options will help you learn code and build exercises to increase your speed. Next option will help you keep track of your progress. The last options let you send code via modem or radio, view program information and set program parameters.

The main menu's code learning option teaches the basic dit and dah sounds. After being introduced to new code you are drilled to improve your proficiency. If an error is made, Super Morse makes the correction and shows the difference between the selected code and the correct code. After you have mastered the basic code you can progress to words and messages. From the word options you can continue to the enhanced mode that will give you exercises to improve your over all code performance. The program has no prerequisites. You can start with the basic options or jump straight to the enhanced option.

Super Morse can be configured to meet any hams needs. You can adjust the sending speed and frequency. The user can select character groups to study. You can study letters, number, or punctuation separately or together.

M. Lee Murral - WD5CID, did an excellent job writing Super Morse Code. Its easy to see that this ham knows what it takes to learn Morse code. This comprehensive code trainer can help anyone improve his code skills. Mr. Murral is asking for a $20.00 contribution as the registration fee for the program. If you are a contributor you will receive a full copy of the programs documentation in Word Perfect and the latest version of Super Morse.

ANTI VIRUS SOFTWARE

Penicillin will not cure computer viruses. These viruses are highly contagious and can be found anywhere. They are usually transmitted from unknown sources and have been found on all forms of computer software. By the time you discover the symptoms of the virus, its usually too late to prevent its damage.

Prevention is the best know medication against computer viruses. Never use a computer program unless you have scanned its contents with an up to date anti virus scanner. In addition, always use a terminal resident (TSR) virus prevention program. These programs are placed in memory when your system starts up and stays there to alert you about programs that may contain viruses.

There are many anti virus scanning programs. McAfee's VirusScan and FPROT are two of the leading shareware anti virus scanners available. VirusScan has a commercial and Widows version. Both VirusScan and FPROT are easy to use and kept current by the developers. Monthly data updates can be obtained directly from the companies BBS.

McAfee's VirusScan program is one of the most popular virus scanners on the market. It runs directly from the DOS prompt or with a number of DOS shell programs. Command line options can be obtained by simply typing Scan. VirusScan comes with an option to remove any detected viruses.

FPROT was developed in Iceland, is menu driven and will run with any system using DOS 2.0. The program can clean infected disks, and comes with a TSR option to protect against viruses.

Registration of VirusScan for personal use is $65.00. Commercial registration is higher. There is no registration fee for personal use of FPROT. Commercial registration fee for the program varies starting at $1.00 per computer ($20.00 minimum). Don't be mislead by the large difference in registration fees. They are both good programs, but do not detect the same viruses. It is hard to recommend one virus scanner over the other, so getting both may be the best approach.

Obtaining and using a virus scanner is a good way to prevent virus infections. Remember that there are new viruses appearing daily. Its always important to keep your virus scanner up to date.

For more information about Super Morse, anti virus shareware programs, or a free disk catalog, please contact Mom 'N' Pop's Software <ASP>, PO Box 15003-HD, Spring Hill, FL. 34609, (352) 688-9108.

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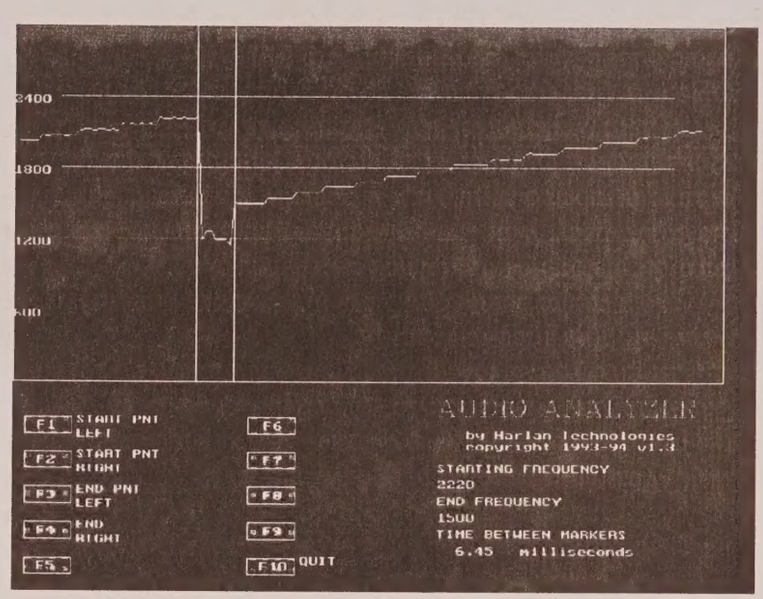

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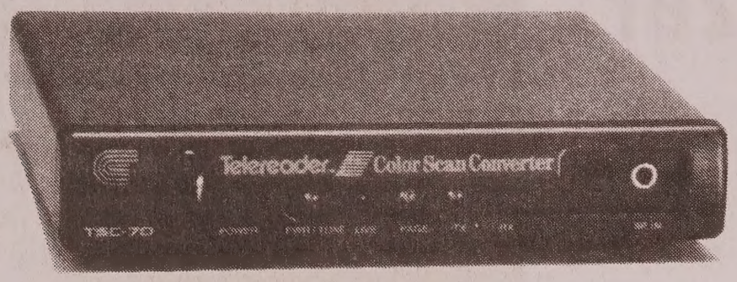

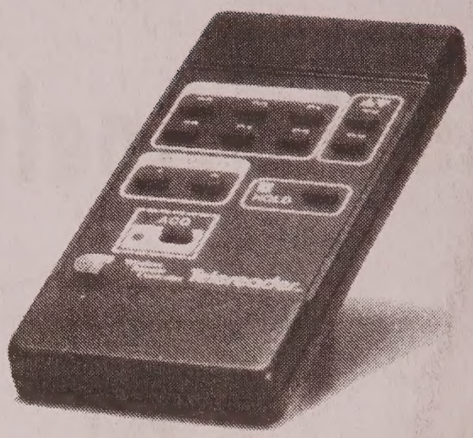

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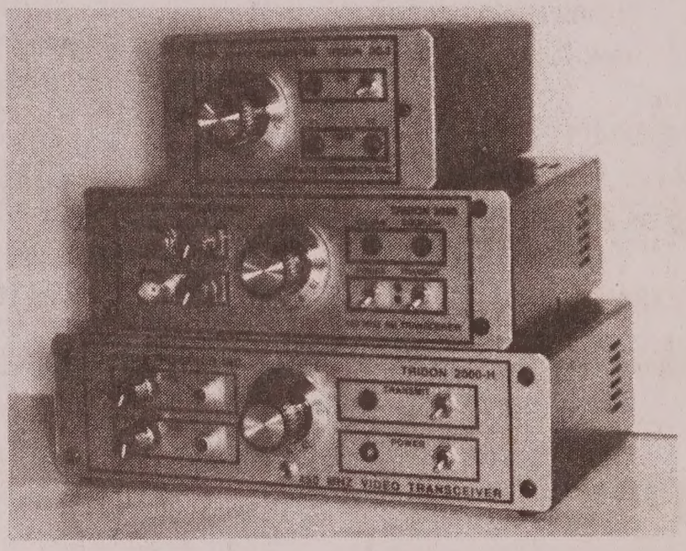

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